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BOOK REVIEW

Essays on Astronomical History and Heritage

A Tribute to Wayne Orchiston on his 80th Birthday

Steven Gullberg & Peter Robertson (eds.)

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This comprehensive *Festschrift* is dedicated to Wayne Orchiston, a renowned New Zealand-born historian of astronomy who has published numerous books and articles, co-founded the *Journal of Astronomical History and Heritage* (JAHH), and continues to serve as its Managing Editor to this day.

A detailed foreword pays tribute to Wayne Orchiston as a historian of astronomy and lists the many institutions where he worked, including his early years as a radio astronomer before he turned to the history of science. Following relatively lengthy biographies of all the authors, the book contains 33 essays, organised into six main themes that broadly correspond to Wayne's areas of research: Astronomy and Society; Emergence of Astrophysics; History of Radio Astronomy; [History of research on the] Solar System; [History of] Observatories and Instrumentation; Ethnoastronomy & Archaeoastronomy. As is always the case with such anthologies, the length and academic quality of the contributions vary considerably, and quite a few do not present new findings but instead summarise the authors' earlier research. Two of the essays are specifically dedicated to the honouree: "Wayne Orchiston and the History of Radio Astronomy" (James Lequeux); "Solar Eclipses, Wayne Orchiston, and Me" (Jay M. Pasachoff). Other authors, too, recall their encounters and collaboration with Wayne in their essays.

It is not possible to discuss all the contributions to this commemorative volume here. I shall therefore present three essays by way of example, in line with my own interests.

Steven J. Dick (USA), who, like Wayne Orchiston, began his career as an astronomer before moving into the history of astronomy, examines the broad role of astronomy in human society in "*Cosmos and Culture: Linking the Heavens and the Earth*", using several examples linked to his own and Wayne's research. In doing so, he highlights, amongst other things, the concept of 'heritage', which has also found its way into the history of astronomy and the title of JAHH since the late 1990s. Further areas of interaction between astronomy and society include cosmological world views not only from antiquity to Copernicus, but also today with exoplanets and astrobiology – as well as navigation and timekeeping. I found the table containing numerous time scales, all of which are linked to astronomy, particularly noteworthy. The question of the dimensions of the universe, which is crucial to humanity's view of the world, is addressed on the basis of observations of Venus transits. One section summarises the author's research into discoveries and classifications in astronomy. In the section "Philosophy of Astronomy", the author discusses the influence of culture on astronomy, focusing in particular on issues relating to philosophical research approaches and methodologies, as well as the role of technology in research. He argues that greater attention should be paid to the philosophy of astronomy.

In “*The Mere Fanciful Abstractions of Science*”, the British-Canadian astronomer Alan H. Batten, who died in 2024, provides an overview of the emergence of astrophysics in the 19th century. In doing so, he highlights, amongst other things, the conflict between the practical applications of astronomy and pure research (‘mere fanciful abstractions’, according to George B. Airy). In a sense, this ties in with the general reflections of Steven J. Dick: what does astronomy contribute to society – should it be devoted primarily to practical applications, or is basic research also of great importance? However, I do not entirely agree with the characterization of the “old-fashioned positional astronomy of Airy and Bessel”. As I have shown in a study on Friedrich Bessel’s relationship with the emerging field of astrophysics, he was open to new developments, and his astrometric work was of great significance to astrophysics, both in terms of content and methodology.

In “*On Jean-Charles Houzeau and Hilmar Duerbeck: How Transits of Venus Shaped Their Later Professional Lives*”, the Belgian astronomer Christiaan Sterken draws parallels between the two astronomers of the 19th and 20th centuries. Jean-Charles Houzeau de Lehaie (1820–1888), a native of Belgium, organised two American expeditions to observe the 1882 transit of Venus, whilst the German astronomer Hilmar W. Duerbeck (1948–2012) undertook extensive studies on the history of such expeditions in the 19th century in the years leading up to his untimely death, working closely with the IAU’s Transits of Venus Working Group. As one of the editors of JAHH, Hilmar Duerbeck also had close ties with Wayne Orchiston. Christiaan Sterken concludes: “Jean-Charles Houzeau was one of the true gentleman scientists of the Victorian era; Hilmar Duerbeck was undoubtedly one of the last such scientists in modern times.”

The book concludes with an index of persons and subjects, which is surprisingly brief for a book of this length. The reason for this is that only a small number of people have been included in the index; most of those mentioned in the book are missing from it, for example many of the early radio astronomers (see the list on pp. 278–79 in James Lequeux’s contribution).

This book provides an interesting summary of many recent studies in the historiography of astronomy. The table of contents can be found in <https://doi.org/10.1007/978-3-031-29493-8>.

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