

## **Fred Watson, Stargazer – The Life and Times of the Telescope**

Allen & Unwin 2004, 342 pages, AUD\$ 35.00 (US edition: Da Capo Press 2005, US\$ 24.95)

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I devoured this book! Excitingly written, it presents a lot of valuable – and correct – information, throughout the exciting history of the telescope. All the major advances, from its invention in Holland to future projects are presented in detail.

Fred Watson is Astronomer-in-charge of the Anglo-Australian Observatory at Coonabarabran, NSW. I first wondered, how a man in the outback could write about history of astronomy, which took place mostly in “old Europe”. But Sir Patrick Moore notes in his foreword, that “Fred Watson is uniquely qualified to write this book. He is one of the world’s leading astronomers...”. He is right. The result shows, that Watson has visited the major places, carefully searched the libraries, and collected information from the leading protagonists. Based on profound knowledge of past and present astronomy, combined with great experience in writing for non-specialists, he was able to create a book, which could become one of the major sources on the “life and times of the telescope”. The nice collection of black & white figures plus a few colour pages, gives an adequate impression of what is written in the text. The book’s format is fairly small, fitting well in a small bag. But be aware, that the 342 pages, presenting comprehensive information, will take some time – ideal reading for your vacation! When finished, you’ll become an expert on the subject.

The very starting point is Tycho: the grand finale of visual measurements using the unaided eye. Before Watson describes the invention of the telescope in Holland, where different opticians competed (one of them Hans Lippershey), he mentions forerunners like William Bourne and Leonardo da Vinci. The work of Galilei and the first astronomical use of telescopes is discussed next. Thanks to the inventions of Kepler and Dollond, the design of the refracting telescope changed, but, in parallel a radical new instrument was created by Newton, Zucchi and Gregory: the reflector. Watson informs the reader about all types, connected with the names of Cassegrain, Nasmyth, Herschel or Short. The developments and discoveries in the 19<sup>th</sup> century are presented in detail, e.g. the giant reflectors of Lassell and Lord Rosse, who found the spiral structure of M 51 in 1845. A critical time, where reflecting and refracting telescope were competing. The latter had the benefit of precision equatorial mountings - the only way for accurate measurements. Without such high tech refractors, like those constructed by Fraunhofer, the first parallax could not be determined. Telescopes were always a matter of conflict such as that between James South and the Rev. Richard Sheepshanks. Watson is able to present such stories in an exciting way.

The late 19<sup>th</sup> century is the era of “dream refractors”, installed at Vienna, Potsdam, Paris, Lick or Yerkes. But they were soon replaced by modern reflecting telescopes put on high mountains: Mt. Wilson, Mt. Hamilton, Palomar Mountain, Kitt Peak, Hawaii and the South American sites. Higher and larger is still the motto. Watson also critically discusses the latest telescope projects, like the “Overwhelmingly Large Telescope” (OWL). Such a giant would eventually turn out to be, as he put it, the “ULT = Unnecessarily Large Telescope”!

The book contains only one small error: The figures on pages 122 and 132, showing the Cassegrain and Gregorian telescope designs, are interchanged, but this does not change my excellent impression in any way. The text is enhanced by a large “notes and sources” section at the end of the book. Of equal value are the many references, a glossary, a collection of the “world largest telescopes” (with descriptions) and finally a comprehensive reference list; all covering some 52 pages!

Wolfgang Steinicke