

spectroscopic observations of prominences outside of an eclipse, Huggins

... became more aware of the need to establish and preserve his priority whenever he engaged in some research project he believed to be original.

One of the advantages Huggins had as an amateur astronomer was that he was not swayed by the dictates of observatory or university policy, and could follow his own interests and inclinations. Thus, he attacked a wide range of spectroscopic research programs, involving the Sun (sunspots, prominences, the corona, a total solar eclipse), stars (including variable stars, and a nova), nebulae and meteors. Arguably the most important of these related to unravelling the true nature of (gaseous) nebulae and revealing that by marrying the spectroscope and the Doppler effect astronomers could determine the line-of-sight motions of individual stars. Nor were all Huggins' observations spectroscopic, for he also carried out visual observations of the anomalous lunar crater Linné over a 6-yr interval.

One of the strengths of this book is the space assigned to Huggins' involvement in astropolitics (e.g. the Devonshire Commission and British Government funding of astronomy and observatories). Barbara Becker also skilfully presents the deteriorating relationships between Huggins and Norman Lockyer and Huggins and Dr Henry Draper, and the growing friendship between Huggins and George Ellery Hale. She also reveals the critical part played by Margaret Huggins (née Murray) in her husband's research, and in continuing to actively promote his public persona after his death in 1910 (see Chapters 10, 12 and 15). Margaret was 24 years younger than William Huggins, but in her "... he found both a lifelong and devoted companion as well as an interested and capable collaborator." (page 170). Largely through Margaret, astronomical photography became an important part of the research strategy at Huggins' Tulse Hill Observatory.

It was only when he was in his 70s that Huggins

... began reaping the recognition of colleagues and the nation for the fruits of his life's work. Knighthood [in 1897] and other honours were capped by election as President of the Royal Society. Although he had no interest in retiring yet as an active investigator, he nevertheless became increasingly nostalgic and wary of encroachment upon his past accomplishments. In this important phase of his career, he – with the invaluable assistance of his wife Margaret – began the challenging task of carefully laying out the groundwork for what would become the foundations of his historical image. (page 267).

That "historical image" appeared in a 23-page paper by William Huggins titled "The new astronomy: a personal retrospect", which was published in 1897 in *Nineteenth Century: A Monthly Review*. It is this 'sanitised' autobiography that later scholars used to recount Huggins' life, but through access to original letters, observational notebooks and other archival sources, Barbara Becker has been able to create a more realistic account of the life of Sir William and Lady Huggins.

Barbara has an appealing style of writing, and consequently *Unravelling Starlight* ... is an entertaining and easy read. For those wishing to go further, most chapters are accompanied by numerous endnotes, and a 28-page Bibliography (including a listing of all of the Huggins' published papers) and a 6-page Index round out this fascinating book. My only regret is that the paperback review copy I received was very poorly bound, so that the book literally fell apart as soon as I opened it.

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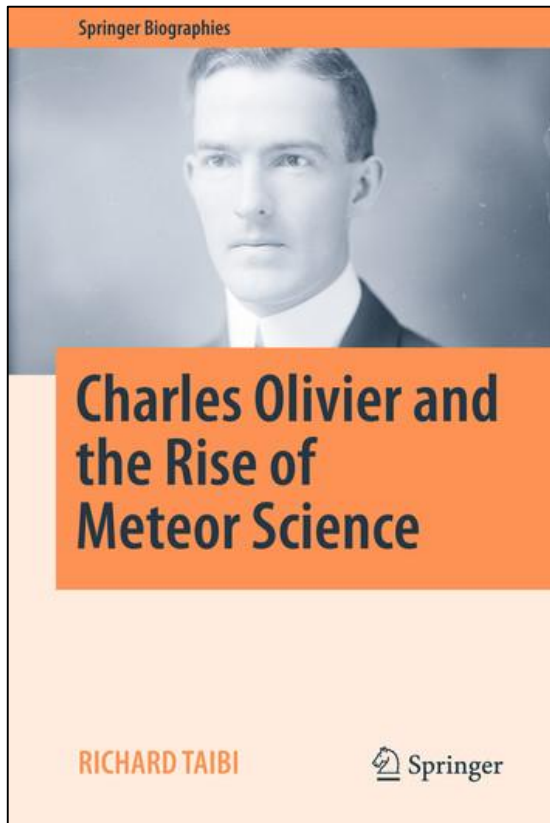
***Charles Olivier and the Rise of Meteor Science*, by Richard Taibi. (Springer International Publishers, 2017). Pp. xxxii + 497. ISBN 978-3-319-44518-2 (hardback), 165 x 240 mm, €99.99.**

When I began visual meteor observing in 1960 I wrote to Professor Charles P. Olivier from the American Meteor Society seeking advice on observing programs and techniques. He was quick to reply with encouragement that led eventually to the publication of my first two, albeit very short, research papers (Orchiston, 1963, 1964). Although I was a rank unknown from the Antipodes, even as a busy academic Professor Olivier found time to assist me, and I was suitably impressed. Now, upon reading Richard Taibi's book I realise that I was not alone: over the decades Professor Olivier helped wean thousands of amateur astronomers—many, like me, still in their teens—into meteor astronomy.

So who is this remarkable man? Charles Pollard Olivier was born in Charlottesville, Virginia, in 1884. The family lived quite close to the University of Virginia's Leander McCormick Observatory and from an early age Charles Olivier showed an interest in astronomy, which was encouraged by Professor Ormond Stone. In 1898 14-yr old Olivier observed the Leonid meteor shower, which launched what would become a lifelong commitment to meteor research. After graduating with B.A. and M.A. degrees in Astronomy from the University of Virginia Olivier went to Lick Observatory, where he completed a

Ph.D. on meteor astronomy in 1911. But while engaged in his Master and Doctoral studies he also conducted micrometric observations of double stars with the 26-in (66-cm) and 36-in (91.4-cm) refractors at the Leander McCormick and Lick Observatories, and he also carried out variable star observations and photometry of standard stars at the former facility, so not all of his research efforts (and publications) were in meteor astronomy.

After teaching undergraduate Astronomy at Agnes Scott College in Georgia from 1911 to 1914 Olivier joined the staff of his *alma mater*, and stayed there until 1928 when he accepted a Chair in Astronomy at the University of Pennsylvania and Directorship of the Flower Observatory (which housed an 18-in (45-cm) Brashear refractor). Charles Olivier remained at the University of Pennsylvania until his retirement, and his long and productive life came to an end in 1975.



Richard Taibi tells us that by 1911, Olivier ... had a very ambitious goal: no less than gathering scientific data on *every meteor which fell over North America and its adjacent waters*. He hoped that volunteer citizen scientists would accomplish a great deal, but to improve chances of achieving that goal, he asked members of all organisations with scientific interests related to astronomy to relay meteor observations their members happened to make in the course of official or academic duties. (page 41, my italics).

Olivier also responded by founding the American Meteor Society (AMS), and much of *Charles Olivier and the Rise of Meteor Science* between pages 41 and 270 recounts the vicissitudes of that Society through to 1936, including its observational programs, Olivier's publications, and the general response of other professional astronomers to meteor astronomy.

Meanwhile, in 1925 Olivier's book, *Meteors*, was published, and this would remain a standard reference for many years. In 1930 his second book, *Comets*, was published. Unfortunately, both books are mentioned almost in passing in Taibi's book, and it would have been nice to learn more, especially about Olivier's first book.

To round out his detailed review of Olivier's involvement with the AMS, between pages 270 and 286 Taibi summarises non-USA amateur meteor astronomy up to 1936. Apart from a 'lengthy' (4-page) discussion of Germany, all of the other national accounts are short. The Canadian account, for example, mentions P.M. Millman, but does not include Jarrell (2009) or Tors and Orchiston (2009) in the references. It is to be hoped that Taibi and others (e.g. Martin Beech) will publish further details in the future.

The author of *Charles Olivier and the Rise of Meteor Science*, Richard Taibi, is a retired clinical and forensic psychologist with a lifetime interest in astronomy, and an avid meteor observer. Taibi tells us that his project started off as a history of the American Meteor Society, but instead evolved into a biography of its founder, Charles Olivier, from 1899 to 1936, along with scores of amateur astronomers "... who volunteered to produce the data he analysed and published." (page viii). Taibi refers to these as "The Stalwarts", and they number more than 80 and occupy pages 291–481 of this 529-page book. Putting biographical flesh onto this skeletal list of names was valuable, but if this book should go to a second edition it is important that Taibi expands some of these biographies by networking effectively with colleagues who have relevant information. For example, in reviewing only the Australian and New Zealand 'Stalwarts', there is further published and unpublished information available on Murray Geddes, Ronald McIntosh (e.g. see Orchiston, 2017), J. Fraser Patterson (he was an Australian and never lived in Auckland, New Zealand) and Ivan Thomsen. Meanwhile, it is to be hoped that Taibi will now publish papers (in refereed journals) on some of the more distinguished individuals in his book who have been thoroughly researched.

Charles Oliver and the Rise of Meteor Science is a book long overdue. C.P. Olivier is a famous name in the annals of meteor astronomy, and it is a pleasure to learn more about him, while the history of the American Meteor Society was cry-

ing out to be told. Each chapter is complete with extensive footnotes (some of which even extend for more than half a page), and at the end a list of references. So we have much to thank Richard Taibi for in producing this timely book, which belongs on the bookshelves of all avid visual meteor observers with an interest in history.

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