reading'. (Unusual is that if a reference is cited in more than one chapter, then it gets an additional entry in the reference list, so actually there are fewer than 106.) A four-and-one-half-page index ends the book. The book is well produced with a design familiar from other CUP textbooks; my only serious complaint is that the wide margins, which some readers might find useful, are always on the left, thus the inside margin on odd pages, which is not very practical. The even-page headers contain the chapter, the odd-page headers the section; that should be the case for all books. (Despite that difference, the layout of the headers is the same, with the page number always at the upper left, above the wide margin; here also it would sit better on the right on odd pages, at the outside edge.)

This could be a useful book for those who want a concise mathematical description of many topics in GR. — Phillip Helbig.

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The Royal Observatory, Greenwich, 1881–1939, by Lee T. Macdonald (UCL Press), 2026. Pp. 321, 23 × 15·5 cm. Price £40 (paperback; ISBN 978 1 80665 0449).

Having worked for several years at the Royal Greenwich Observatory at Herstmonceux in Sussex, I always had the fond notion that my spiritual home was the Royal Observatory at Greenwich, founded in 1675 by order of King Charles II for the practical purpose of helping British mariners to determine their longitude at sea. While we have all heard stories about Astronomers Royal from long ago — Flamsteed, Halley, *et al*. — much less was ever heard about those in more recent times. The present book does much to redress the balance, giving copious and well-researched (and well-referenced) details about the work done under William Christie, Frank Dyson, and Harold Spencer Jones in that period between the retirement of George Airy and the start of the Second World War. The records have been scoured for details of the staffing of the Observatory with emphasis on the work of Chief Assistants, Assistants, and 'computers' of various types in the numerous departments which greatly increased in number during this period. While the 'bread and butter' work for navigation — the provision of accurate time and the *Nautical Almanac* — was of high priority, other work blossomed beside it in the Solar Department, the Magnetic and Meteorological Department, and in the nascent astrophysical studies permitted by a range of newer and larger telescopes. International collaboration was always important, such as the *Carte du Ciel* project, and various solar-eclipse expeditions were mounted, including the famous 1919 'relativity' one. Ultimately, of course, the unstoppable growth of London (Cobbett's Geat Wen) put paid to the Royal Observatory, and after the period covered by this book the work was transferred to the wonderful location of Herstmonceux. It was fascinating to read of several personalities who worked at Greenwich and who were still busy in Sussex when I arrived (including Alan Hunter, Donald Sadler, and Humphry Smith).

This is a fine account of the 'official' work of the Royal Observatory but I was disappointed not to learn more about the personalities of those who worked there. Certainly we discover the special interests of the Astronomers Royal, but little about their characters. Similarly, I suppose, we discover little about the part this *Magazine* played, despite the fact that it was founded at Greenwich in 1877 and was based there until the move to Sussex, and many of

the Editors came from the Observatory staff. And now for the future. Well, there is now a fine museum at Greenwich but of the 'real' Observatory, just read Ian Robson's fascinating account of the 'Observatory Wars' in this issue to see that the shambles that is British science has lost one of its great institutions. — David Stickland.

Discovering Quarks: Remembering Feynman, Gell-Mann, and Tollestrup, by George Zweig (Cambridge University Press), 2025. Pp. 201, 26 × 21 cm. Price £39·99 (hardbound; ISBN 978 1 009 47350 7).

This is a fascinating book that charts the history of the discovery of quarks, written by one of their co-discoverers. It is a rich and multi-faceted work, approaching the subject from many different angles. Part autobiography and part a history of the field, it offers numerous insights into the main characters in the story, illuminated by a fair bit of physics along the way. Zweig studied with Richard Feynman and Alvin Tollestrup, and the book includes chapters devoted to each of them, along with a chapter on Murray Gell-Mann. Richly adorned with quotations, personal reminiscences, and anecdotes, it provides a vivid sense of their personalities, the very different ways in which they worked, and how the community viewed the emerging ideas at the time. The book also touches on questions of recognition and whether some of the less-well-known figures received the credit they deserved. Zweig himself, although now widely regarded as a co-discoverer of quarks alongside Gell-Mann, has not received the same level of recognition. I would not say that that issue is the main focus of the book, as its scope is much broader, but it does offer some insight into possible reasons. Among those are the fact that Zweig's work initially appeared as a CERN report (reproduced helpfully in an appendix) rather than in a regular journal, the apparent lack of support from some senior figures at the time, and perhaps also the simple fact that the term 'quark' caught on, whereas Zweig's 'aces' did not. The book also contains a substantial amount of physics, which helps the reader appreciate how particle physics developed during the 1960s and 1970s, with some false starts, and it offers insights into the ways of thinking and influence of some of the field's major personalities. Students of physics, as well as readers interested in the history of science, will find it a fascinating and rewarding read. — Alan Heavens.

Probability Theory for Quantitative Scientists, by L. Leuzzi, E. Marinari & G. Parisi (Cambridge University Press), 2025. Pp. 412, 26 × 18·5 cm. Price £54·99 (hardbound; ISBN 978 1 009 58069 4).

This book grows out of a long-running course on probability theory at the University of Rome La Sapienza. It is readable, accessible, and sufficiently deep to satisfy a scientist who wants to understand the mathematical foundations of probability without going all the way to measure theory. In that sense, the title is an accurate description of what the book delivers.

The treatment is grounded in mathematics, but enriched with many examples and perspectives drawn from physics. In particular, it highlights connections with statistical mechanics and introduces topics that are rarely encountered in standard texts. Large-deviation theory, for example, appears surprisingly early and serves as a good illustration of the book's willingness to explore less conventional but important ideas.

One of the strengths of the book is the way it interweaves applications with fundamental theory, and mathematical development with physical insight. The scope is quite varied: some topics are treated in considerable depth, while others are covered more briefly, giving a sense of a guided tour through the subject. The final chapter provides a useful synthesis, drawing together themes introduced earlier.

Overall, it is clearly written and engaging, and will reward both students and researchers in the quantitative sciences. For readers who want to move beyond simply applying probabilistic techniques to understanding where they come from and how they connect to broader ideas, this is an excellent and illuminating resource. — Alan Heavens.