of aberration suggesting the existence of another, distinct phenomenon. This was the nutation of the Earth's axis caused by the Moon. Bradley had suspected this early in his study but continued observing to cover a whole period, 18·6 y., of the precession of the Moon's orbital nodes — not only was he a meticulous observer, but also a very patient one, willing to continue a campaign long enough to make certain of a result. Besides these and many other observations (Appendix 1), and his teaching, he was active in other projects: studying the shape of the Earth from isochronal pendulum observations in collaboration with Graham, helping the Earl of Macclesfield set up his well-equipped observatory in Shirburn Castle, and beginning his tenure at the Royal Observatory.

Bradley was appointed Astronomer Royal on the death of Halley in 1742. Fisher gives an illuminating picture of the networking behind this appointment. Bradley's earliest years at Greenwich were taken up with testing and rectifying the instrumentation, which had been neglected during the final years of Halley's life, often with the aid of observations made at Shirburn Castle. In 1749 he requested funding to remedy the dire state of the instruments and facilities at the observatory. This was supported by the Board of Visitors, Royal Society, and Admiralty with the result that George II agreed an award of £1000. He constructed the New Observatory (Transit House) building to house the quadrants and new transit instrument. The prime meridian defined by the latter became the origin for the Ordnance Survey. In 1750, he began observations for a Catalogue of 3222 stars, each star being observed 20–30 times, together with ancillary data including atmospheric pressure and temperature to allow correction for refraction. He was not satisfied with possible treatments of atmospheric refraction and the data remained unreduced.

Any biographer of Bradley has to contend with the fact that, after his death, all of his Greenwich observations (shades of Flamsteed!), correspondence, and other items passed to the executors of his estate. Fisher gives a good account of the long battle with the Board of Longitude for the papers followed by their subsequent poor handling by Bradley's successor at Oxford, Thomas Hornsby, with the result that some were lost. Eventually, Bradley's comprehensive observations for his Catalogue of 3222 stars were reduced by Bessel and published only in 1818.

This is a substantial work, based on abundant primary sources with endnotes to each chapter. Some of the references are not easy to decipher owing to the misuse of the abbreviation '*ibid*' where there is no connection with the immediately preceding references. Altogether, the book would have benefitted from the help of an editor, who could also have removed some of the repetition and re-ordered some of the material to improve the flow. That being said, the author has successfully restored Bradley to his rightful place with the fullest ever account of his scientific life and legacy. Along the way, we can learn much about the practice of astronomy at the time, giving another reason to recommend this book heartily. — Peredur Williams.

Power Laws in Astrophysics. Self-Organized Criticality Systems, by Markus Aschwanden (Cambridge University Press), 2025. Pp. 264, 25 × 18 cm. Price £125/$160 (hardbound; ISBN 978 1 009 56293 5).

The concept of self-organized criticality was introduced only in the late 1980s but its validity covers an enormous range of physical phenomena. One of the most familiar is the 'sandpit' model in which avalanches occur according to some instability. The result is often power laws in size distributions. This book is a very detailed discussion of the concepts of power laws in astrophysics with comparison to observations both from space and ground-based. In the realm of solar physics, which is the main expertise of the author, power laws in size distributions are extremely common and are particularly well illustrated in this book. For those not especially familiar with self-organized criticality, possibly a more general introduction to the subject might profitably be read in combination with this specialized monograph. — KEN PHILLIPS.

A Brief History of Black Holes: And Why Nearly Everything You Thought You Know About Them is Wrong, by Dr. Becky Smethurst (Pan Books), 2023 (originally published 2022). Pp. 290, 19·7 × 13 cm. Price £10·99 (paperback; ISBN 978 1 5290 8674 4).

According to the back-cover blurb, Smethurst is YouTube's most popular astrophysicist. With an impressive list of awards, she is also an RAS Research Fellow at the University of Oxford, focussing on the interaction of supermassive black holes and galaxy evolution. In contrast to the next book I read[1,2], this is very much a book about astrophysics and the roles black holes play in it. The scope is broad and starts with background, both physical and historical, about stellar structure and evolution and General Relativity (GR) before coming to black holes themselves (some pre-GR ideas about black holes are briefly mentioned). Throughout the book, the history of the topic is well entwined with the astrophysics being discussed, an organic whole rather than a straight history of science about a topic which is still relevant or a book on astrophysics with historical footnotes. Traditional (non-quantum) black holes and other compact stellar remnants set the stage for more concrete astrophysics (the chapter on why black holes are not black is not about Hawking radiation, but about X-ray astronomy). Black-hole mergers and their detection *via* gravitational waves, the possibility that Planet 9 is a black hole, supermassive black holes, accretion discs, and the role of black holes in galaxy evolution are among the topics in the fifteen relatively short chapters. The final chapters deal more with the mathematical theory of black holes and Hawking radiation, though like the rest of the book in a non-technical manner.

The book is well written in an entertaining style and is a good non-technical introduction to the importance of black holes in astrophysics. Since her research is also on that topic, I feel safe in recommending it. I enjoyed reading it except for the very end. The book only briefly discusses the CMB, but I found it strange that while *WMAP* is mentioned, *Planck* is not. Although they make up only a small part of the book, the final pages discussing cosmology contain several mistakes. First, the density parameter is explicitly defined to include matter, radiation, and dark energy, but is followed by an almost standard textbook discussion for the case of no dark energy. But even that is not correct, because the description of eternal (asymptotically exponential in the case of a positive cosmological constant) expansion is conflated with the idea of the Big Rip, in which even (gravitationally or otherwise) bound objects will be torn apart, though that could happen only with a non-standard, highly speculative form of dark energy. If, as explicitly stated, the cosmological constant is not assumed to be zero, then the relation between geometry and destiny, *i.e.*, between spatial curvature and the future expansion (or contraction) of the Universe, is much more complicated. However, again the textbook version with no cosmological constant is presented. While it is correctly stated that *WMAP* measured the Universe to be at least very nearly spatially flat, that is characterized as being