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REVIEWS

Geniuses, Heroes and Saints. The Nobel Prize and the Public Image of Science, by Massimiano Bucchi, translated by Tania Aragona (MIT Press), 2025. Pp. 208, 23 × 15 cm. Price $35 (about £27) (paperback; ISBN 978 0 262 55184 7).

This is the second book I have reviewed about the Nobel Prizes. The first one[1] concentrated on a selection of Prizes awarded in topics related to astronomy and analysed the reasons for awarding the Prize in each case. This book is very different: it is a broad review of Nobel Prizes as a whole (*i.e.*, all the Prizes awarded in the categories set out in Nobel's will), looking at the statistics and at how they affected the public view of science in general. It is an excellent translation (and slightly updated version) of an Italian original published in 2017.

The book starts with the origin of the Prize* and closes with a list of all Nobel winners up to 2024 in the three scientific categories recognised in Nobel's will: Physics, Chemistry, and Physiology or Medicine (Literature and Peace are not significantly discussed in the book). In between, there are chapters with such intriguing titles as 'How do you win a Nobel Prize?', 'How Einstein won the Nobel Prize and why he almost never received it', and 'How not to win a Nobel Prize: the story of Lise [Meitner] and other Prize 'ghosts'' (people who deserved but didn't receive a Nobel Prize).

*In 1888 April, Nobel (who developed dynamite) was shocked to read his own obituary in the paper, under the headline 'The Merchant of Death is Dead'. He realised that the journalist had confused him with his older brother Ludwig, who had died a few days earlier, but that the headline was aimed at him. Horrified that that would be how he would be remembered, he left a sum in his will to enable the foundation of a Prize for excellence in five fields — the three sciences listed above, literature and the promotion of peace — and indeed that is how he is remembered today.

Interestingly, Einstein received his Prize for discovering the photoelectric effect, not for relativity, which was too complicated for most scientists to understand and provoked strong opposition to him in the German scientific community, including by two Nobel winners (Lenard and Stark). As a result, he withdrew from appearing as an invited speaker at a scientific meeting in 1922 because he had been warned that he was on a list for assassination (partly because he was a Jew — another Jew, the Foreign Minister, had already been killed by gunmen a few months earlier). He kept a low profile after that. However, he was not present at the ceremony in Stockholm where the award was made — he was on a visit to Japan. He received the actual medal and certificate in July of the following year, at a conference in Gothenburg, at which the King of Sweden was sitting in the front row.

Einstein was not the only Prize winner to be absent from their award ceremony. Most were those awarded the Prizes for literature and peace, but there were some scientists who were either ill or unable to attend for other reasons (some were prisoners of war). Some Prizes were handed over in other countries, including in California. Most dramatically, three German scientists refused their Prizes in 1939 as a protest against the Nazi boycott of the Prize.

People who didn't receive the Prize were often nominated many times without success, for example Lise Meitner, nominated for both Physics and Chemistry. Many people think that Rosalind Franklin deserved a share in the Prize awarded to Watson and Crick, but the delay in recognising the double helix (which was crucially dependent on a famous X-ray image taken by her) meant that she had died before their nomination was accepted and the Prize cannot be awarded posthumously. More recently, Jocelyn Bell Burnell suffered from astrophysics not being recognised as physics (the Prize was awarded for the design and construction of the telescope). I note without comment that all three are women.

The author then takes his two final chapters to discuss both whether the award makes the Prize-winner more interesting and whether their physical appearance affects anything. Because the author is Italian, he uses the number of articles in the Italian paper *Corriere della Sera* as evidence, and there is some evidence, although the largest number of articles are naturally about Italian Prize-winners. Einstein is the most mentioned of the non-Italians. But a wider survey shows that some people (such as Einstein) were famous before their Nobel, others became famous because of the Nobel, and some were relatively unknown after their win. Why? National identity is one factor as is the type of discovery and the name attached to it, such as the double helix and Kroto and colleagues calling their new form of carbon 'fullerenes' after Buckminster Fuller — easily remembered. Another reason for winners being known to the general public is when the winner participates widely in public debates, even on topics outside their particular expertise.

Finally, there is their public appearance, exemplified by Einstein, whose general appearance so much resembles a caricature of a mad scientist. But in his youth, he also exuded a boyish freshness that made an Italian journalist describe him as like a saint! Other public figures tend to be treated in the same way, and a lay iconography emerged, making scientists into symbols of the social and cultural role of science. Many famous scientists (such as Newton and Pasteur) were regarded as models of asceticism in their disregard for anything (such as food) outside their research work. The model of a saint is emphasised by the relics that are kept after their death. Galileo's right hand is exhibited in the Galileo Museum in Florence, and Pasteur's body was embalmed and buried in a mausoleum in the Institut Pasteur in Paris.

Laureates are expected to be modest and humble about their work, to dress appropriately, and generally to behave with appropriate deference to important people. Those who abuse their privileged position by making inappropriate remarks become, in James Watson's words, "a nonperson" (he had criticized the intelligence of African Americans).

So — are scientists special or are they ordinary human beings? They are both, and the Nobel Prize gives a context for balancing this uncertainty — special enough as scientists to receive the Prize, but quite normal humans in daily life. The book finishes with an epilogue, entitled 'Geniuses, Heroes and Saints — how the Nobel Prize (re)invented the public image of science', reflecting his belief that any Laureate may be seen as one of these three categories. There is also an appendix, listing all the Nobel Laureates in the sciences from 1901 to 2024.

This was a fascinating book to read, but I found it very difficult to review because of the breadth of its coverage. I can nonetheless recommend it strongly. — Robert Connon Smith.

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Starborn: How the Stars Made Us — and Who We Would Be Without Them, by Roberto Trotta (Basic Books), 2023. Pp. 350, 24 × 16 cm. Price £22 (hardbound; ISBN 978 1 529 34608 4).

Spanning almost all the languages of Switzerland, Trotta was born in the Italian-speaking part, then obtained an MSc(Hons) in Physics from the ETH Zurich, and a PhD in Theoretical Physics from the University of Geneva, before spending a couple of decades at Oxford and Imperial College, working mainly in cosmology. After becoming Professor of Astrostatistics at the latter (where he remains a Visiting Professor) in 2019, he moved to SISSA in Trieste in 2020 to establish a new Data Science group and PhD programme (and was also Visiting Professor of Cosmology at Gresham College, 2019–2022). A recipient of many awards and member of many professional organizations, he has also been involved in university administration, not only within astronomy, and founded a consulting firm for statistics. This is his second book. He has appeared in these pages as the speaker at an RAS meeting (with the written version of his talk in the *Magazine*[1]), review author of conference proceedings on astrostatistics[2], author of an unusual book described in an unusual review[3] by one of the usual reviewers, and medal recipient[4].

This book is about how astronomy has influenced the cultural history of humanity, starting off with influences on the author, then covering how the night sky has become less important with time for most people, thoughts on life on a planet with no stars visible, early humans, clocks, navigation, the scientific revolution and its wider ramifications (in particular a good overview of various statistical measures; many mathematical innovations were made by astronomers), and astrology, before concluding with a chapter on the future.*

*That last chapter is similar to, but better than, the last chapters in two other books I've reviewed here[5–8].

At the end of all but the first chapter, there is a narrative concerning a human-like species on a world perpetually covered by clouds. That didn't really work for me* (the third chapter covers the same idea in a better fashion), but that's one of only two relatively minor points I didn't like (though it is at least debatable whether the letter Einstein signed urging that the USA develop nuclear weapons actually played a "crucial" role; even if Einstein regretted it, most historians agree that it would have happened anyway). The other point is the controversy over the name of the *James Webb Space Telescope* (*JWST*). For an alternative view, see ref. 9. Neither this review nor the book which it is about is the proper place for a detailed examination of the conflict (see ref. 9, follow the links, go down the rabbit hole, and form your own opinion), but it should at least be acknowledged that a significant fraction of astronomers (not just those making such decisions at NASA) don't think that a renaming is necessary. (Some have weakened their criticism: even if he personally did nothing wrong, Webb occupied a high position at NASA at a time during which some people were negatively affected by homophobia. Of course, one could levy the same charge against Nancy Grace Roman, his contemporary at NASA, but as far as I know, no-one has done so. Unfortunately, as was the case with Schrödinger (concerning whom exaggerated accusations have been debunked by professional historians of science[10]), many aspects of the cancellation remain, and the debunking gets less publicity than the accusations. Not only in books but also at conferences and so on it has become customary to mention one of a collection of tropes (*e.g.*, Jocelyn Bell should have been awarded the Nobel Prize); the purpose is not to stimulate discussion (quite the opposite: 'no debate'), but rather to signal to those in the know that one is on the right side of history.†)

The examples of the influence of astronomy on humanity cover not only traditional Western societies but also a variety of other ancient and modern societies. (However, one does not have to go so far afield — apart from exceptions like Chaucer and Milton — to find a male Moon and a female Sun: though it's the other way around in the Romance languages, in Germany it is the same as in Japan, Oceania, and among the Maori.) But little-known points from

*I've seen that before. For example, Harry Mulisch's *The Discovery of Heaven* (originally in Dutch, though I read it in German because it was a gift from a friend and my trepidation at reading translations (which might not be good even if the book is) was quelled since Mulisch himself, whose only native language is German, approved the translation) is a wonderful book but also contains what I find to be an annoying extra narrative at the beginning and end of each chapter. One of the main characters in the book is an astronomer (the two others are a linguist and a musician, thus covering three of my main interests) and is extremely well researched. Many readers here will know what astronomical details and people are mentioned even if the latter are not referred to by name.

†Even if the accusation is justified, I find it out of place in such a book, especially if one person is singled out. I have a similar complaint about a book[11] recently reviewed here[12], in which Feynman is the victim. The next two books I read after the one being reviewed now also take the stance that the *JWST* should be renamed. Other tropes mentioned in the book are the ideas that Ada Lovelace was the first computer programmer (see ref. 13 for a good debunking, particularly credible since the author would definitely describe himself as a feminist) and that the normal distribution implies that any deviation from the mean is somehow wrong or abnormal in the vernacular sense. (Gauss originally used the term 'normal' in that respect in connection with 'normal' (*i.e.*, orthogonal) equations. Later, probably *via* folk etymology, it was understood to mean that the distribution itself is normal because it is a very common distribution. In fact Pearson himself didn't like the name because he thought that it could create the impression that other distributions are somehow abnormal. To my knowledge no-one has ever used it in the sense which is mentioned in such criticism, but such criticism has become common through repetition; see ref. 14 for a typical example of the abuse of the term 'normal distribution' (a typical modern article in what used to be a good publication).)

Western culture are also mentioned, *e.g.*, the reason for the order of the names of the days of the week, each corresponding to a planet. Another interesting one, reversing the science-to-society direction: "Scottish physicist James Clerk Maxwell discovered social physics from a review by [John] Herschel of Quetelet's work."[15] And another: At the famous meeting between Napoleon and Laplace at which the latter allegedly said that he had no need for the hypothesis of God, also present were William Herschel and his wife.

There are only a few real typos (though 'Lippershey' for 'Lipperhey', an early telescope-maker, is presumably inspired by a misspelling in an English translation in 1831) or other goofs (*e.g.*, *Voyager 1* was launched in 1977, not 1967) and the overall style makes it a very readable book. There is a lot of information here, in that sense somewhat similar to another book[16] reviewed here recently[17]. Sometimes, though, a bit more precision would be useful; for example, whether "no one in antiquity could predict [a solar eclipse] reliably" depends on what one means by 'reliably'. Similarly, the relationship between tides, the shape of the Earth, and precession is a bit confusing, perhaps having been edited too much. Although Aristotle had the boundary between the imperfect sublunary and the perfect superlunary worlds at the orbit of the Moon, the Moon was thought of as part of the latter, not the former; when alluding to that, it is not clear whether the author agrees. Some things will probably remain speculation, for example, whether the fact that many societies, in many cases independently, consider(ed) the Pleiades to be the seven sisters, though most people can see only six and those who can see more can see more than seven, has been passed down from a time, at least a hundred thousand years ago, when seven would have been visible (proper motion having moved one of them too close to another to be resolved).

At the end of the book, after a couple of pages of acknowledgements and a shift to smaller type, are ten pages of notes, referring to passages in the text marked by superscripts, and containing further explanations (which I would prefer as footnotes), references, or both. References are in the form author, title, page, and refer to the twenty-eight-page bibliography where not only titles but also URLs (many of them for DOIs) are given. Such good references are particularly useful in a book such as this which is so wide-ranging that probably most readers will not be familiar with all of the topics. A fifteen-page index ends the book.

Apart from the two points mentioned above, which don't take up many pages, I enjoyed the book. It is very well written, better than those of many or most native speakers of English. It ranges from Neanderthals to the future and, while the astronomy is explained well, the emphasis is on its effect on humanity. — Phillip Helbig.

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Special Relativity and Classical Field Theory: The Theoretical Minimum, by Leonard Susskind & Art Freeman (Penguin), 2017. Pp. 525, 20 × 13 cm. Price £10·99 (paperback; ISBN 978 0 141 98501 5).

I bought this book (along with several others which I have reviewed recently) in 2024 August in England, mainly because I had previously read and reviewed[1] another book[2] in the series which I found to be quite good; see that review for background. Like that other book, this one is well written and is constructed with a hybrid approach: first some maths, then some physics, then more maths as needed. A frequent complaint about books on Special Relativity is the lack of distinction between purely relative effects as described by the Lorentz transformation, real effects such as the age difference between the travelling and stay-at-home twin, and the appearance of rapidly moving objects. Regarding the last, I was happy to see Terrell rotation mentioned (though I can't find it in the otherwise good ten-page small-print index). Regarding the second item, it is pointed out that the twins differ because one accelerates and one does not. That is true, but one is left with the impression that the acceleration is the cause of the difference. Regarding the first, while it is the Lorentz transformation, it is the Lorenz gauge. (That is a common mistake — and probably not a typo, since there are relatively few typos — which is so common that I don't always mention in my reviews; I usually do mention it when the author gets it right.)

The structure is perhaps a bit unusual, starting with the Lorentz transformation then moving to classical field theory, then to the Maxwell equations, then to classical physics, essentially the opposite of the historical path. However, that does adhere to the theme of the theoretical minimum. While the history of science can be interesting for its own sake, and also provide valuable insight, the historical path is usually not the shortest if the goal is to acquire a good working practical knowledge.* Interestingly, Chapter 9, which connects Susskind's with the traditional approach, is said never to have made it to the video site on which the books in the series are based. (It's still not there, so presumably the corresponding video, if it ever existed, has been lost.)

There are a few black-and-white figures scattered throughout the text, and a few footnotes; no references or suggestions for further reading. (All in all, the books in the series are similar in their structure, though the lack of punctuation and strange mode of referring to equations named after people in the other book I reviewed are not present here.) Between the main text and the index are two appendices, on magnetic monopoles and vector operators. Despite the length, the book is a breezy read, due both to the writing and the somewhat

*All the same, Susskind doesn't merely present the material, but also offers his own comments on what is important and so on. I added two such comments to my collection of quotes: "Notation is far more important than most people realize" (p. 173) and "[P]hysics is always harder without the mathematics" (p. 279). Interestingly, just a few seconds before I had added one by Feynman on the same topic: "[M]athematics is, to a large extent, invention of better notations."

larger than usual typeface and interline spacing. It is a rather faithful rendition of the video lectures, which I recommend to those who prefer that medium to books. I'll probably read the other books in the series and if I find myself able to watch video but not read perhaps even watch all of the lectures. Groucho Marx noted that if one isn't having fun then one is doing something wrong and that the fear of the thorn shouldn't keep one from the rose. Both apply here, as Susskind's enthusiasm comes through well, acting as a glove to help one approach a somewhat thorny topic. — Phillip Helbig.

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An Introduction to Brown Dwarfs. From very-low-mass stars to super-Jupiters, by John Gizis (IoP Publishing), 2024. Pp. 124, 26 × 18·5 cm. Price £75 (hardbound; ISBN 978 0 7503 3385 6).

An Introduction to Brown Dwarfs is an overview of the field of brown dwarfs, designed to bridge the gap from a general astronomy undergraduate education to doing research in the specific sub-field of brown dwarfs. I think that anyone interested in learning the basics of brown-dwarf astronomy will enjoy this textbook, as the tone throughout is both informative and accessible. The text includes insightful footnotes and interesting remarks on the history of the field, along with dozens of beautiful, colour figures that illustrate concepts clearly. In just eight chapters, Dr. Gizis covers all of the main areas of research in the brown-dwarf field, and explains many of the assumptions and customs of the field that are often discussed, yet rarely justified at conferences and in the literature.

The book explores brown dwarfs through a variety of lenses and contexts, but primarily focusses on two main paradigms: star-like and super-Jupiter-like. The text illustrates the similarities brown dwarfs share with both of these types of objects and the lessons that can be borrowed from both stellar and exoplanetary astronomy. The presentation and order of the text is logical and the narrative is easy to follow. Throughout the text, Dr. Gizis provides numerous resources for observational data, interior and atmospheric models, and other software and tools for brown-dwarf research. Highlights include tables of key photometric filters, thoughtful discussion of standard surveys and calibrations, helpful references to and figures of spectroscopic standards, highlights of key papers from the literature, and lists of models and software for different areas of research.

This text has only a couple of very minor issues, including a few errors and typos in the text and figures. Some minor choices in figure labelling or units could be more precise (for example, axes or legends occasionally omit key quantities), but these do not hinder comprehension. I also feel that some of the more interesting aspects of brown-dwarf research were overlooked, including rotation rates and angular-momentum evolution, as well as the role of magnetic fields and the presence of aurorae in brown atmospheres. However, after reading this textbook the reader will be well prepared to explore the literature on these topics themselves.

The printed version of the text comes in at 128 pages and while no exercises or problems are provided, a collection of PYTHON JUPYTER NOTEBOOKS intended to reproduce the plots and calculations of the text is advertised in the first paragraph of Chapter 1. At the time of writing this review, these Notebooks were not yet publicly available. — MEGAN E. TANNOCK.

Our Accidental Universe: Stories of Discovery from Asteroids to Aliens, by Chris Lintott (Torva), 2024. Pp. 265, 24 × 16 cm. Price £22 (hardbound; ISBN 978 1 911709 18 3).

Chris Lintott is well known as successor to Patrick Moore as presenter of the BBC's *The Sky at Night*, as well as a professor of astrophysics in Oxford and co-founder of the Galaxy Zoo citizen-science galaxy-classification project (which was integrated into to the Zooniverse platform of which Lintott was also the PI for 15 years). This isn't his first book but is the first which I have read. As the subtitle says, it is a book about actual (*e.g.*, pulsars), and potential (*e.g.*, extraterrestrial life) discoveries, many of them accidental. The chapters (the content of which isn't always obvious from their names) cover SETI; craters in general and Enceladus in particular; 'Oumuamua (an entire book[1] about which was reviewed in these pages[2]); comets, meteorites, asteroids, space weather, and near-Earth objects; the claims of detection of phosphine on Venus and Titan in general; deep-field astronomy and *Gaia*; radio astronomy and gravitational waves (with pulsars providing the connection); and the cosmic microwave background. The last chapter covers many more topics with less detail on each, such as the Carte du Ciel, modern surveys such as the Sloan Digital Sky Survey, Galaxy Zoo, exoplanets, brightness variations in Betelgeuse and Boyajian's Star, and a look to the future in the context of the *Vera Rubin Observatory*.

Many interesting facts are mentioned, some familiar (a (sidereal) day on Venus is longer than a year — though it's strange that its retrograde rotation isn't mentioned), some less familiar (fascinating details in the life of Grote Reber), and some a bit confusing (radio astronomy at Jodrell Bank jumps from the *Lovell* telescope to *e-MERLIN* without mentioning the highly successful *MERLIN*, the main difference being that the older *MERLIN* was an interferometer connected *via* microwave communication while *e-MERLIN* uses fibre-optic cables to connect the same telescopes). One of the usual cosmology errors occurs: although our Universe has a positive cosmological constant and will expand forever, the former is neither necessary nor sufficient for the latter. Like in the two books I read immediately before this one[3–6], there is the standard complaint about naming a telescope after James Webb (see ref. 4 for details).

There are a few errors I put down to carelessness: Venus is high in the western sky when at greatest eastern, not western, elongation; Harrison Schmitt and not Schmidt was the first scientist (and last astronaut) to set foot on the Moon — maybe just a typo; more puzzling is dating the dinosaur-killing Alvarez impact at five rather than sixty-six million years ago, though the periods before and after, Cretaceous and Paleogene, are correctly named; it's the Domesday and not the Doomsday book (perhaps the author was thinking of asteroid impacts).

There are many topics in science about which there is not yet a consensus, but I don't understand why Avi Loeb is criticized so harshly. While it is true that his book[1] on 'Oumuamua does contain "a reading list of over two hundred

separate works, every single one of them with Loeb as a co-author" (most astrophysicists won't write that many papers in their entire career; at last count, Loeb is approaching a thousand refereed-journal papers), the end notes do provide references to the works of others mentioned in the text, whether or not they agree with Loeb.

There are a few black-and-white photos scattered throughout the book. Notes are footnotes, often providing additional humour. The main text is followed by a substantial collection of backmatter: a couple of pages of glossary, six on further reading (by chapter), a page of picture credits, almost ten pages of index in small print, and one paragraph about the author. This is not an attempt to survey astronomy systematically as a whole or even a part of it; rather than the definitive collection, it's more a 'best of', highlighting topics of interest to the author and probably the reader, providing more details than is usually the case on many of them. Despite my minor qualms, the book is an enjoyable read, presenting some topics not often encountered in popular-astronomy books and other more common ones from a new perspective. — Phillip Helbig.

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Eyes in the Sky: Space Telescopes from Hubble to Webb, by Andrew May (Icon Books), 2024. Pp. 176, 20 × 13 cm. Price £10·99 (hardbound; ISBN 978 1 8377 31275 5).

Not to be confused with any of a number of non-astronomy books or other items with identical or similar titles (such as the film *Eye in the Sky* with Helen Mirren or the unrelated song of the same name by The Alan Parsons Project), nor with *Eye on the Sky*[1,2] nor with *Eyes on the Skies*[3,4], nor *Eyes on the Sky*[5]★, this little book is about telescopes in space or, more accurately, about what they observe (it is not about the technical details of the telescopes themselves). May has a PhD in astrophysics and worked in academia and in government and private sectors before becoming a freelance writer and consultant. This book is part of the *Hot Science* series edited by Brian Clegg, in which both May and Clegg have written several books each; some of the latter's have been reviewed in these pages[6–9]. The author takes us through various space telescopes such as *HST*, *JWST*†, *Spitzer*, *Chandra*, *Fermi*, *Kepler*, *TESS*, *Herschel*, *Gaia*, and *Planck*, along the way providing the necessary essential background (the electromagnetic spectrum, different types of telescope optics, *etc*.), and highlighting their most important observations and basic astrophysical details about the objects observed. Of course, not all telescopes in space could be covered, but conspicuous by its absence is the very successful *ROSAT*.

★Amazingly, not reviewed in these pages!

†Including the now apparently obligatory (but here fortunately brief) remark that it should have not been named after Webb.

There are a few black-and-white figures scattered throughout the book, which ends with an index. All in all a very enjoyable and well written book for lay readers interested in astronomy, but also a good quick reference for those who need an executive summary of one of the space telescopes covered. — Phillip Helbig.

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Modular Forms and String Theory, by Eric D'Hoker & Justin Kaidi (Cambridge University Press), 2025. Pp. 480, 25 × 18 cm. Price £59·99/$79·99 (hardbound; ISBN 978 1 009 45753 8).

Modular forms are not, perhaps, a topic close to the heart of many astronomers. Sinusoidal functions are periodic on an interval; more complicated functions can be expanded in a basis of them. Modular forms — elliptic functions such as the Jacobi theta function — can be viewed as generalizations of these, to capture the periodicity properties of tori of arbitrary shape. For those who wish to do (2-dimensional) quantum field theory on a torus (something that is an essential part of the standard formulation of amplitudes in string theory), modular forms will crop up to a greater or lesser extent.

This book provides a detailed account of modular form from a physics perspective, in the context of their application to string theory. It is written by two of the experts in the subject and gives a comprehensive mathematical physics account of modular forms. Certainly, this book is an essential reference for researchers working in this field. This is not a book to dabble into for a quick summary of the topic: it is a serious book for serious scholars in this area. It must, however, be candidly admitted that this will include few, if any, astronomers: to appreciate this book, a strong side interest in mathematical physics would be necessary. — Joseph Conlon.

The Stargazers' Almanac 2026. An Illustrated Month-at-a-Glance Guide to the Night Sky, compiled by Callum Potter (Floris Books), 2025. Pp. 28, 30 × 42 cm. Price £14·99/$24·99 (stiff paper; ISBN 978 178250 945 5).

The perfect Christmas present for anyone even remotely interested in the continually-changing pageant of the night sky, this *Almanac* has been the ideal guide for laymen and beginners for many years. For an observer located at a latitude around 50° North, the calendar-like *Almanac* can be hung up to display the sky in both northerly and southerly directions for each month. The constellations are clearly marked and so are the planets visible at the time. Highlights are pointed out (*e.g.*, Orion and its nebula in January) and a panel along the lower part of the chart shows the phases of the Moon. No telescope needed — just find a dark location and enjoy the celestial show. — David Stickland.

William Dawes. Scientist, Governor, Abolitionist: Caught between Science and Religion, by R. de Grijs & A. Jacob (Springer), 2024. Pp. 272, 23·5 × 15·5 cm. Price £64·99 (hardbound; ISBN 978 3 031 38776 0).

On 1787 May 11, a fleet of 11 ships left Portsmouth, with some 1420 souls on board. This was the first of a planned series of voyages to take those who had been given sentences of banishment from the courts to the newly founded colony in Australia at Botany Bay. The journey took over eight months. Now known as The First Fleet it contained, in addition to those guilty of serious crimes, a new governor for the colony and a number of specialist midshipmen, one of whom, William Dawes, is the subject of the present volume.

Nevil Maskelyne, the Astronomer Royal, had commanded the Board of Longitude to set up an observatory ostensibly to observe the return of a comet which he predicted would re-appear in 1788 or 1789. Dawes had shown a promising command of navigation which he acquired at the Royal Naval Academy in Portsmouth and was also a good linguist, so he was sent to Greenwich to undertake further training under Maskelyne. Dawes had joined the Marines and had seen action in the West Indies against the French. He was regarded as amiable, kind, and truly religious, and what he saw of the slave trade there repelled him.

When The First Fleet reached Australia Dawes set up the first observatory in Sydney Harbour. He had been equipped with instruments from Maskelyne including a clock by Kendall (K1), a quadrant by Bird, and a sextant by Hadley, along with various meteorological instruments. On arrival, Dawes set up an observatory where he made regular measures of gravity, temperature, and atmospheric pressure, but also when the sky was clear at night (and he wasn't particularly impressed with the number of clear nights) he discovered several new nebulae and took observations of the Moon's parallax and the satellites of Jupiter. He was never able to find Maskelyne's comet.

When he left Australia in 1791 that essentially saw the end of his scientific work. He then went to Sierra Leone and in all spent four lengthy periods of time there. His moral and religious beliefs often saw him in conflict with authority. The pressure to ban slavery was being orchestrated by William Wilberforce and others. It had been decided that Sierra Leone would become a private colony incorporated by its own Act of Parliament, supported but not controlled by the British Government. It would be populated by freed slaves from the Americas. This appealed to Dawes who considered slavery to be an abomination. Enough evidence survives to give a good picture of a man who experienced Australia, West Africa, and the West Indies during particularly turbulent times to produce this excellent account which has been meticulously researched, particularly that part relating to his work on behalf of the Church Missionary Society in the West Indies which ultimately saw him at odds with senior members of the Anglican clergy.

The authors summarize him thus: "A genius or a polymath, a theorist par excellence yet lacking enough doses of savvy and pragmatism, his politically woefully inept worldview, combined with an abrasive personality, unmovable, alienating stances and religious convictions set in stone, rendered him a mere footnote in history, fading away from almost all opportunities to make a tangible real-world impact."

His last post took him to Antigua in 1813 where he remained until his death in 1836. This is a most welcome addition to the astronomical literature. His son, William Rutter Dawes, who suffered from ill-health during his youth and remained in England, barely seeing his father, but who rose to prominence in Victorian astronomy deserves similar consideration. — Robert Argyle.