terms of software and data, pointing out that having such objects on display effectively 'silences' them into relics. At this point, I would have liked some further discussion on managing the balance between scientists' perceptions on what should be collected versus the curators. As astronomical and other science projects become increasing complex, collecting for the future will inevitably need to be a collaborative decision-making process among curators, scientists, technicians, and even among museums themselves, as to 'who gets what' in this global story (cf. Boyle 2012; 2019).

Chapter 3 ("Treasures of the Storeroom") takes us on a virtual tour of museum storage facilities and rightly reminds us that curators, the principal focus of the book so far, are just part of a huge team of experts who keep museums functioning. Chapter 4 ("Engaging Objects") shifts our attention to education and outreach programmes; astronomy features here in the use of the Grand Orrery at the Whipple Museum by educator Rosanna Evans who uses storytelling and questioning techniques to encourage school children to explore this object via perspectives from science, history, geography and art. Alberti also cites the *Ships, Clocks and Stars* exhibition (National Maritime Museum, Greenwich, 2014) as an example of how curators worked hard to dispel the myth of John Harrison as the 'lone genius' who solved the longitude problem (page 169). Again, I would have liked more discussion here about this interpretative challenge in persuading visitors to accept more historically nuanced versions of well-known narratives. Anyone who has engaged with public astronomy and has been 'corrected' by well-meaning participants that Galileo invented the telescope and proved that the Earth is round will sympathise!

Chapter 5 ("Campaigning with Collections") reflects Alberti's current interest in museums as venues for raising awareness around issues such as the climate emergency, misinformation and human rights. He boldly states "… science museums should be political, using their rich material memory and considerable credibility to campaign for good causes." (page 200). The last section, Chapter 6 ("Lively Collections"), is Alberti's call to action in which he advocates adding more human stories to collections, keeping museums relevant with contemporary collecting, and always framing collections with respect to their users (visitors, scientists and museum professionals) through story-telling and emotional engagement.

Overall, I would say that this is a useful overview of the museology of science museums that would be most relevant to students of Museum Studies, or perhaps early-career curators. It is well-written in a clear and accessible style that progresses at a lively pace and the thematic nature of each chapter makes it suitable for modular study with plenty of challenging questions for group discussion. If you are considering a career in museums, or just simply curious about the challenges of modern science curatorship, then I would certainly recommend this volume as an engaging introduction.

References

Boyle, A., 2019. Modern physics in the museum: shaping a UK national collection in the twentieth century. *Journal of the History of Collections*, 31(3), 487–502.

Boyle, A., 2012. Space for space in Science Museum. *Astronomy & Geophysics*, 53(2), 207.

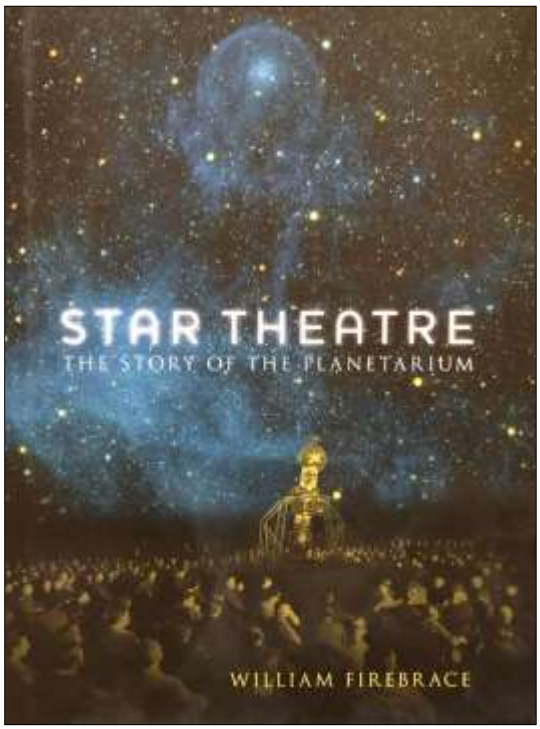
Dr Louise E. Devoy
Royal Museums Greenwich Park Row,
Greenwich, London, SE10 9NF,
United Kingdom.
E-mail: ldevoy@rmg.co.uk

Star Theatre: The Story of the Planetarium, by William Firebrace. (London, Reaktion, 2017). Pp. 229. ISBN 978-1-78023-835-7 (hardback), 160 × 215 mm, US$40.

The book by William Firebrace goes back to Egyptian ceiling paintings to ground his survey of planetariums in antiquity. He also finds direct inspiration in the large globes whose prime example is the Gottorf Globe of 1654–1664 currently located in St. Petersburg, Russia; and an early 'star theatre' built by the Sasanian King Khrosrow II in the seventh century CE (page 18). Nearly five pages are devoted to the world's oldest planetarium, completed in 1781 by the Dutchman Eise Eisinga. For a reference Firebrace gives a booklet written by the museum director Andre Warmenhoven, and while this is available now at the museum giftshop, it does not appear to be online; the excellent paper by de Ridder (2002) published in this journal is a more ready source.

There is an extended section on the Moscow Planetarium, on pages 89–103. It includes three photos; one from 1929 shows the exterior of its amazing parabolic dome which has a "… ratio of shell thickness to internal volume of 1:280 – less than that of an

eggshell to an egg." (page 94). "From the exterior, the planetarium resembles a cylindrical egg cup cradling a great egg." (page 95). The author relates this to the celebration of Easter: "… linking of the daily rising of the Sun and the rebirth of the soul is a reminder of a theme that goes back to images of the Egyptian goddess Nut." (page 95). Whether or not this was the intention of the architects is not made clear. At some date (Firebrace does not state when, but I believe it was 1994), "Most of the old planetarium was, controversially, destroyed …" and then rebuilt. "What stands there today looks something like the old building, but without much of its original atmosphere." (page 102). Unfortunately, no photograph is given of its current look, but we have a poem written by Vladimir Mayakovsky on how it inspired him in 1930.



Proletarian woman
Proletarian man
Come to the planetarium.
Come in
Hear the lively buzz.
In the lecture hall.
Spectators sit awaiting the sky to be shown
The head-sky-manager comes
The expert in sky matters
He comes
Pushes and twirls the million celestial bodies.

Planetariums in Germany have also suffered greatly. Bizarrely, due to their supposed resemblance to synagogues, the Nazis regarded planetariums as "… part of a Jewish conspiracy." (page 74). The one in Nuremberg was pulled down in 1934. "Sadly, most of the other 1920s German planetariums also had a short lifespan." (page 74). The oldest extant ones are in Jena and Hamburg.

While the book has definite strengths, it also has several weak spots that prevent it from being a reliable scholarly volume. The author is an architect, and while his expertise there is very much in evidence, the rigorous scientific aspect of his chosen subject is lacking. The timeline of planetariums on pages 209–211 could have been more inclusive (a comprehensive list of more than 3,500 can be found at the Worldwide Planetariums Database), and as it gives only the opening date it is not obvious if any particular one is still open, closed or demolished. While the (now defunct) McLaughlin Planetarium in Toronto is included in the list and mentioned on page 127, it has no Index entry.

The author states that the globe constructed by Roger Long was named "… The Uranium to celebrate the discovery of the planet Uranus several years earlier." (page 38–39). Since Long's device was built in 1765, this is surely an error, as Uranus was not discovered until 1781. As he gives no reference for anything related to Long, it is not possible to determine if he is merely repeating an earlier mistake.

Firebrace does not delve into orreries. While a full study of these devices is certainly beyond the book's remit, a brief discussion would have been in order as they are also sometimes referred to as planetariums. For example, the National Museums of Scotland (2023) terms the 1913 orrery by Michael Sendtner a planetarium, noting that "Planetary models, or planetaria, had existed since the time of the Ancient Greeks."

The author devotes several pages to Oskar von Miller and his efforts to build the Deutsches Museum in Munich. On page 54, he relates "Miller's Copernican planetarium, constructed in 1913, was a fascinating but ultimately unsuccessful machine …", but in the caption to a photograph of the Copernican Room on page 55, he states it was built in "1923(?)." Somewhere close to 1923 (the official opening year of the planetarium inside

the museum) must be correct, as Miller had only ordered the Zeiss projector in 1913.

Overall, this is a fascinating and entertaining book on the origins and development of how humans have tried to represent and recreate the wonders of the night sky. With its inclusions of material from the worlds of poetry, literature (*Murphy* by Samuel Beckett, 1938), art (by Molohy-Nagy, 1925) and film (*Rebel Without a Cause*, 1955), this is a very fine international survey for anyone interested in the lure of planetariums.

References

De Ridder, J.M., 2002. Eise Eisinga and his planetarium. *Journal of Astronomical History and Heritage*, 5(1), 65–87.

National Museums of Scotland website (accessed 11 Feb 2023) https://www.nms.ac.uk/explore-our-collections/stories/science-and-technology/sendtner-orrery/

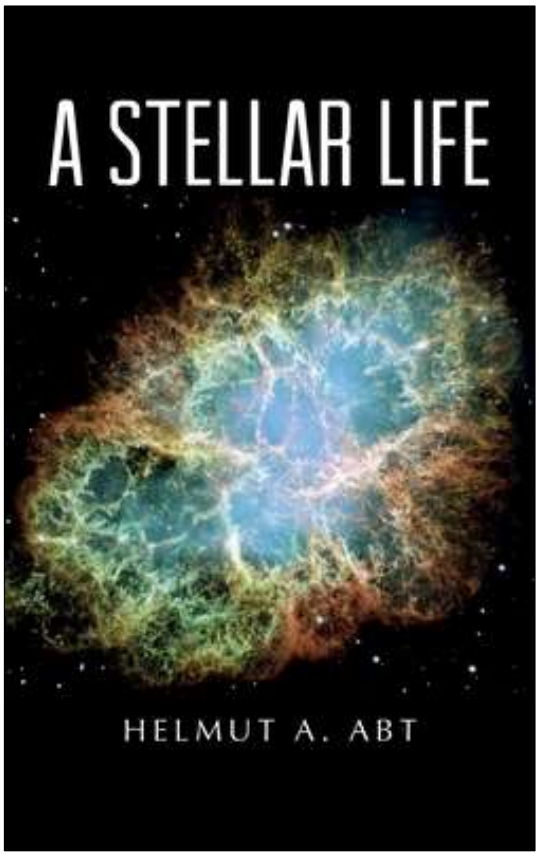
Worldwide Planetariums Database. https://www.aplf-planetariums.org/en/

Dr Clifford Cunningham
University of Southern Queensland, 3915 Cordova Drive, Austin, TX 78759, USA
E-mail: Cliff.Cunningham@usq.edu.au

A Stellar Life, by Helmut A. Abt (Charleston, Palmetto Publishing, 2020). Pp. 241. ISBN 978-1649905185 (hardback), 155 × 230 mm, US$27:99.

Helmut Arthur Abt, born in Germany in 1925, has more than 400 publications to his name in stellar astronomy, at this date garnering some 9000 citations. Prolific but also deeply engaged in the profession, Abt was the Managing Editor of the *Astrophysical Journal* from 1971 to 1999, and over the years held positions at Lick, Yerkes, then Kitt Peak. He trained at Northwestern and Caltech, receiving his PhD there in 1952 under Jesse Greenstein with a thesis on the physical nature of the variable star W Virginis, characterized as a prototype population II Cepheid. In the mid-1950s on leave from Yerkes, Abt helped to search for a site for the new national observatory, eventually joining the Kitt Peak staff in 1959. In addition to being a leading researcher contributing to a wide range of stellar astronomy, he is also a prolific organizer of journal data and cataloguer of Astronomical data, compiling a series of *ApJ* General Indexes covering issues from 1954 to 1971. He presided over the Astronomical Society of the Pacific from 1966 to 1968, and has served astronomy in countless ways.

A Stellar Life touches on much of Abt's accomplishments and experiences in a delightfully idiosyncratic compilation of short essays illuminating his life history and offering personal insights into the many astronomers, colleagues, institutions and cultures he encountered during his long career and extensive travels. These essays run from just a few paragraphs to many pages, and to this reviewer, have the sense of stream of consciousness diary entries. Most fascinating are his travels to exotic sites in the Pacific Islands, Japan, Spain and Thailand. Among them, the most moving are his vivid summar-



ies from some 14 trips to China, observing the culture and enjoying the sights and sounds surrounding many observatories there. He barely reveals his involvement with efforts to improve communications between China and astronomy in the West, but it is evident given his enthusiasm, as he says, "I find China to be the most fascinating country in the world …" (page 134).

His chapter essays illuminating his many travels (80+) and the characters he met, travelled and worked with, are randomly interspersed between snippets touching on his research topics, which ranged widely from stars with abnormal spectra, to the Crab Neb-