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REVIEWS

Attention is Discovery. The Life and Legacy of Astronomer Henrietta Leavitt, by Anna Von Mertens (MIT Press), 2024. Pp. 256, 26 × 21 cm. Price £32/\$34.95 (hardbound; ISBN 978 0 262 04938 2).

This is a biography with a difference: a life in science seen through the eyes of an artist. Henrietta Swan Leavitt is internationally known as the discoverer of what has long been known as the period–luminosity relation for Cepheid variables (officially renamed by the IAU in 2008 as Leavitt's Law), but this book makes it very clear what a laborious task it was to discover it — first noticed and published in 1908 (as a single sentence in a paper recording details of 1177 variables, with 16 variables in Table VI: "It is worthy of notice that in Table VI the brighter variables have the longer periods"), and confirmed four years later after more detailed study with more Cepheids.

In our day, it is hard to remember the revolution caused by the replacement of photographic records by digital ones recorded by CCDs. Miss Leavitt was one of the famous women 'computers' at Harvard College Observatory in the early 1900s who meticulously studied and recorded information contained on

many of the more than half-a-million 8×10-inch glass plates in the Harvard Plate Stacks. The plates cover both the northern and southern hemispheres, the latter being taken at the Observatory's outstation at Arequipa in Peru, from where the plates were shipped back to Boston in many stages: mule train to the Pacific coast, by ship to Panama, over the isthmus by land, and finally by ship to Boston, providing many opportunities for damage; amazingly, very few plates were broken.

Von Mertens stresses the distinction between looking and seeing. Looking is a passive approach, seeing takes intensive and careful inspection and understanding. Seeing requires total concentration for hours at a time and must have taken its toll, physically, mentally, and emotionally. The results were faithfully recorded by Leavitt and her colleagues in many volumes of handwritten notebooks, all of which survive; many were consulted by the author. The plates were annotated by Leavitt, writing in pen on the reverse side of the plate, separated from the emulsion by a millimetre of glass. The plates are now being digitized and initially these markings were erased to give a clearer starfield, but their historical and archival importance has now been recognized and the most important ones are being preserved.

The book is lavishly illustrated by many photographs of plates (mostly negative), meticulous drawings of plates by the artist Jennifer L. Roberts (who also provides a ten-page illustrated essay on Leavitt), and by Von Mertens herself. There are also illustrations of Von Mertens' own artwork and photographs of Leavitt and her colleagues, some including their percipient and supportive Director, Edward Pickering. An essay by João Alves recounts his accidental discovery of Leavitt's work in the 1943 edition of Shapley's book *Galaxies*. He quotes Shapley as writing "Leavitt ... had the gift of seeing things and of making useful records of her measures". Later, he says "It would only later dawn on me that looking at an image over a long period is far from an exercise in boredom: it's a *technique*. Repeated looking, day after day, gazing, contemplating. Looking for a sign, no matter how small." In his PhD thesis, he used this technique to uncover what he calls the Radcliffe Wave — the alignment of many very faint gas clouds running from the Orion Nebula towards the Galactic plane. It runs for more than 10 000 light-years from Taurus to Cepheus, unsuspected until Alves' painstaking work that followed Leavitt's technique of looking until you see.

There is so much in this book that I can't cover it all. But I really enjoyed the very different perspective and can strongly recommend it to anyone with an interest in art and/or the history of astronomy. At the modest price, it would make a good present for someone. At the very least, it would be a beautiful coffee-table book. — ROBERT CONNON SMITH.

The Milky Way Smells of Rum and Raspberries ... and Other Amazing Cosmic Facts, by Jillian Scudder (Icon Books), 2023 (originally published 2022). Pp. 255, 19·7 × 13 cm. Price £10·99 (paperback; ISBN 978 1 83773 101 5).

Jillian Scudder is associate professor of physics and astronomy at Oberlin College, Ohio. As one might expect from the title, the book is a collection of interesting facts, the thirty-four chapters of about four to eight pages each discussing them in turn, starting with the entire Universe and moving in through galaxies, stars, and black holes to the Solar System (with which somewhat more than half of the chapters are concerned). Although chosen to be interesting, they are used as jumping-off points to explain various aspects of astrophysics.