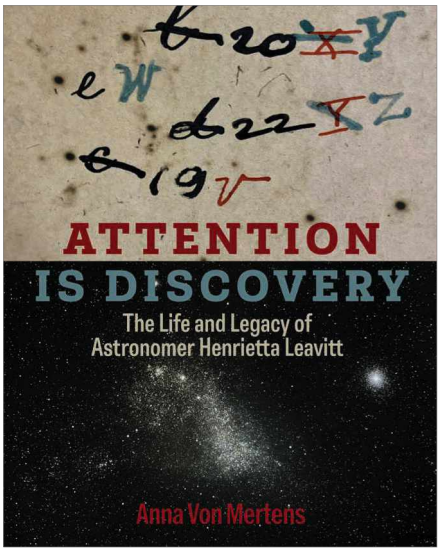
New astronomy and space titles reviewed

BOOKS



Attention is Discovery

Anna Von Mertens
MIT Press
£32 ● HB

To many readers, Henrietta Swan Leavitt is already a familiar name. One of a group of women working as 'computers' at Harvard in the late 19th and early 20th century, she studied Cepheid variable stars and luminosity. Her work, as visual artist Anna Von Mertens points out, was not only important in itself, but also laid the groundwork for subsequent science measuring the distances to galaxies, greatly increasing our understanding of the size of the Universe.

Attention is Discovery: The Life and Legacy of Astronomer Henrietta Leavitt is not a straightforward biography. It does tell the story of Leavitt's life and work, and is rich in photographic evidence of this work and the working life of the Harvard Observatory. But it also deliberately and interestingly explores Leavitt's life through interdisciplinary perspectives, inspired by what astrophysicist João Alves terms the "Radcliffe fellowship experience". Von Mertens is a textile artist who put on an exhibition of work at the Harvard Radcliffe Institute inspired by Leavitt's astronomy, and she reflects on this as she writes about Leavitt. Interspersed are essays from novelist Rebecca Dinerstein Knight, astronomers João Alves and Wendy Freedman, and art historian Jennifer L Roberts, who have all been impacted by Leavitt's work in some way.

A central thread (unintentional pun; Von Mertens's artwork is thread-based) running through the book is the idea of attention as discovery. Early on, Von Mertens makes the point that Leavitt's work, and that of her female colleagues, was often dismissed as mundane, routine, systematic and therefore inevitable, unlike the inspired, skilled discoveries of their male counterparts. Von Mertens counters this by showing the importance of regular, attentive observation. Attention to detail, she argues, was essential to Leavitt's discoveries just as it is essential to Von Mertens's artwork or to the work of any of her collaborators, regardless of their field. Far from being a lesser scientific skill, attention is central to all forms of expertise.

Von Mertens explores the wide-ranging impact of Leavitt's meticulous work

This book is an interesting read, a biography but also an exploration of how science and art can inspire one another. ★★★★☆

***Emily Winterburn** is a science historian and author of* The Quiet Revolution of Caroline Herschel

MIT PRESS/HUA

Interview with the author

Anna Von Mertens

What drew you to Leavitt's work?

I first heard her name at the Harvard Plate Stacks [Harvard's 550,000-strong astronomical photographic glass plate collection]. I was struck by the significance of her work. Leavitt died before witnessing the impact of her discovery, so I wanted to celebrate her work and life. I found a commitment to small moments of attention that built a larger discovery. Each moment was its own act of discovery: a reminder to live more fully in our exquisite world.

How important was her work?

Harlow Shapley used Leavitt's law to estimate the size of our Galaxy: much larger than previously conceived. Edwin Hubble used Leavitt's law to prove the Andromeda Galaxy had to be outside those bounds. He found galaxies were moving away from us: our Universe is expanding. Even today, Wendy Freedman is using JWST to observe Cepheid variables and apply Leavitt's law to specify the expansion rate of the Universe.

Do the plates have aesthetic beauty?

Absolutely! Leavitt was hired to analyse the glass plates, but dry plate photography was nascent, producing divergent results: even the colour of starlight affected how stars translated onto glass. I made drawings based on some of the plates Leavitt studied as a way to understand these nuances. Each star had exquisite specificity. Leavitt was dedicated to her work, but I think she also appreciated the unique language of the stars captured in emulsion.

***Anna Von Mertens** is the recipient of a 2021–2022 artist research fellowship at the Smithsonian Astrophysical Observatory*