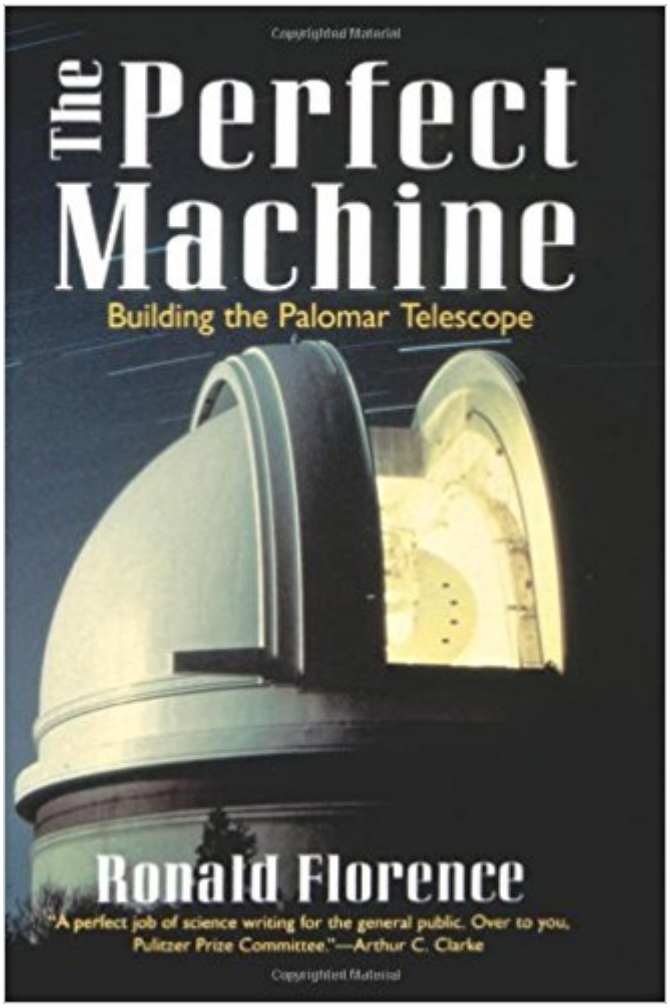
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The Perfect Machine: Building The Palomar Telescope



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Synopsis

Almost a half-century after is completion, the 200-inch Palomar telescope remains an unparalleled combination of vast scale and microscope detail. As huge as the Pantheon of Rome and as heavy as the Statue of Liberty, this magnificent instrument is so precisely built that its seventeen-foot mirror was hand-polished to a tolerance of 2/1,000,000 of an inch. The telescope’s construction drove some to the brink of madness, made others fearful that mortals might glimpse heaven, and transfixed an entire nation. Ronald Florence weaves into his account of the creation of "the perfect machine" a stirring chronicle of the birth of Big Science and a poignant rendering of an America mired in the depression yet reaching for the stars.

Book Information

Paperback: 451 pages
Publisher: Harper Perennial (August 4, 1995)
Language: English
ISBN-10: 0060926708
ISBN-13: 978-0060926700
Product Dimensions: 5.3 x 1.1 x 8 inches
Shipping Weight: 1.4 pounds (View shipping rates and policies)
Average Customer Review: 4.5 out of 5 stars 45 customer reviews
Best Sellers Rank: #1,207,337 in Books (See Top 100 in Books) #27 inÃ Â Books > Science & Math > Astronomy & Space Science > Telescopes #358 inÃ Â Books > Science & Math > Astronomy & Space Science > Star-Gazing #482 inÃ Â Books > Science & Math > Physics > Optics

Customer Reviews

"A superb history by a super writer and historian."-- Allan Sandage "Over to you, Pulitzer Prize Committee."-- Arthur C. Clarke

Ronald Florence was educated at Berkeley and Harvard. The author of five previous books, he lives with his wife and son on the Connecticut shore, where they raise Cotswold sheep.

This is a fabulous account of how the Hale Telescope came into being! There are several books that take the Hale Telescope into account but none to this degree (to my knowledge). One, for example is Polomar, by Helen Wright, 1952. Although it may be out of print, it is (I am still reading it

at this time) written by the biographer of Hale. It is written using the actual words of the people involved and as such should certainly be added to the "must read" list. But " The Perfect Machine" in my opinion stands alone. If you are interested in this account or history of this momentous accomplishment, please, take time to consider picking it as a read. Coming into being, before the Depression and between two great wars, it survived other setbacks like a flood, technology failure and even an earthquake. Publicly, it was received with incredulity and awe. I was born in 1949, the same year the Hale telescope took its first image of Hubble's Variable Nebula. It took some 30+ years to get there and it is still being used today. I think it is one of the best stories ever told about man's quest to push the boundaries of science and knowledge ever outward.

Florence captures the conflict between billionaires looking to polish their images, the scientists clamoring for the project to be competed, and the most interesting group of all, the engineers simply trying to build a machine utterly distinct from anything that had gone before. To use Tom Wolfe's phrase, they all collaborate to "push the envelope" and build something utterly unique for an esoteric scientific purpose. The story flows from corporate boardrooms to vast laboratories expending as much money as fuel to attempt a seductively elegant but impossible process for casting quartz, to the mundane synthesis of the common pie pan or baby bottle with the grandest scale glass object to be built. The character of the utterly random band that finally designs the telescope, none of them actual telescope experts, reads like an international band of technologically adept brothers, working wonders with steel, glass, copper, Flying Horse Telescope Oil, and an intuitive feel for the behavior of glass on a microscopic scale, all fighting for that perfect moment. First Light. Beautiful and inspiring book.

The best book about the internal politics and efforts of building what is still the largest aperture equatorially-mounted telescope in the world. Especially good at reporting the egos and peculiarities of some of the patron saints of astronomy and telescope making. My only difficulty is with the format of the book. What I suspect started its existence as a full-sized or even small coffee-table volume has shrunk in this reprinting to a difficult-to-read (to these old eyes) paperback. Also, the halftone art is less than spectacular; it probably began as larger images. Still, it's better this way than having the book go completely out of print.

I read this book on Kindle after seeing a seminar on the Hale telescope. As an amateur astronomer, engineer, and US history buff, I thoroughly enjoyed the multiple dimensions of this book. One

narrative is the politics and economics of the administrative and funding background for the telescope, including the rise of CalTech and its challenge to the traditional east-coast scientific establishment; intrigues of the Carnegie and Rockefeller foundations, etc. Another narrative is the conception and creation of the mirror itself, both its failed and successful attempts at casting the blank at GE and Corning, its transport to Pasadena, and the fastidious grinding and finishing operation. Yet another is the engineering design and fabrication of the telescope mount and dome. Through it all one gets to know the individuals involved, their strengths and weaknesses, a sense of the fundamental contribution of poor Hale doggedly pursuing his dream as he was increasingly suffering from his mental demons.I have not seen the hardcopy, but presume it has numerous photos and sketches. The Kindle version had none, and I found myself searching online for pictures and photos to help me understand some of the technical descriptions. Porter's portfolio of technical sketches is a masterpiece and an essential companion to the latter third of the text.

Quite a read!I have been reading this for several weeks now, and I am enchanted. At times it reads like a mystery novel, at other times it's more matter-of-fact. The way that Mr. Hale got funding for a project that had not even been drawn yet makes an amazing story, and it's a testament to the trust of his philanthropists that he could get the project finished.The politics, petty jealousy, and sniping by scientists and academics is fun to read. And, lo! The evangelical Christians tried to stop it from being built for fear that its operators would learn the secrets of the universe ÃƒÂ¢Ã â ¬Ã â œ it was the work of the Devil!This is a great book about modern scientific history, a must-read for anyone who has an interest in cosmology or astronomy, or how the world works.

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