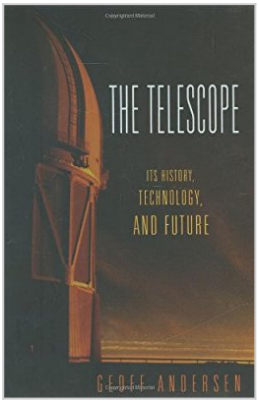

The Telescope: Its History, Technology, and Future

By Geoff Andersen

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In the four centuries since its invention, the telescope has transformed how humans view the universe and their place in it. But what do most of us know about telescopes themselves--their history, how they work, what they are being used for today, or what the next generation of billion-dollar telescopes will look like? In *The Telescope*, Geoff Andersen fills in all the details for us in an accessible, nontechnical way that will appeal to the amateur astronomer and anyone else who has been more than a little curious about this amazing instrument.

The book covers every aspect of optical telescopes--from the humblest backyard setup, to state-of-the-art observatories, to the Hubble Space Telescope and spy satellites. Chapters describe the development, design, and operation of telescopes; how observatories are sited, engineered, and built; variations such as solar and liquid-mirror telescopes; and some of the key astronomical discoveries telescopes have made possible. And there are plenty of surprises along the way. We learn, for example, that most of today's professional astronomers never even look through their own telescopes, relying instead on digital imaging, measurement, and analysis--or even remote computer control of a night-shrouded observatory on the other side of the Earth.

But, as *The Telescope* explains, these magnificent instruments do more than simply peer into space. They project and receive laser beams--for communicating, mapping, and making detailed observations of the Earth. They also look down at us from spy satellites, providing secret images to intelligence agencies--and, increasingly, giving a curious public access to more pedestrian images.

The Telescope is the ideal introduction to a fascinating instrument that has taught

us so much--but that most of us know so little about.

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The Telescope: Its History, Technology, and Future By Geoff Andersen Bibliography

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- 256 pages

Editorial Review

Review
"Sets a high standard....The book is at its best when discussing modern telescopes."**--Martin Ince,** ***The Times Higher Education Supplement***

"As we approach the 400th anniversary of Hans Lippershay's 1608 patent for a refractor telescope, Andersen offers an accessible, nontechnical account of instruments that show us distant objects...There are short but informative discussions of interferometry and advanced telescope techniques."**--*Science***

"A great guide to astronomy's indispensable tool."**--Ian Glass,** ***BBC Sky at Night***

"A pleasant, lightweight, non-technical, and readable account...Although the book concentrates on the astronomical uses of telescopes, there is an interesting section on their use for surveillance (i.e. as spy cameras)."**--C.R. Kitchin,** ***Astronomy Now***

"A thorough, up-to-date and largely non- technical account spanning four centuries and including information for amateurs who want to establish their own observatory or even make their own telescope."**--Gerry Rising,** ***Buffalo News***

"Geoff Andersen does what at first glance seems impossible: justice to the subject...He escorts you through time, from the first telescope to proposed giants like the Overwhelmingly Large Telescope...The book's real gem is Andersen's voice. His knack of writing personal and historical tidbits in a humorous, natural dialog highlights his passion for telescopes...*The Telescope* provides endless food for thought--even for us professional astronomers."**--Monica Bobra,** ***Sky & Telescope***

"Andersen's title suggests that this is one of many how-to books about telescopes--not so! His focus is the history of the telescope--the invention that helped spark the Renaissance...Andersen spins an engaging story that can be easily read in one afternoon by any layperson. It is well worth a space on any science buff's shelf."**--T.D. Oswalt,** ***Choice***

"This popular science book is of interest to anyone who wishes to learn more about astronomy and telescopes. It is well written, fascinating and delightful to read. The principles of telescope design are clearly explained with just enough detail to allow the interested reader to understand the basic concepts."**--*OPN Optics & Photonics News***

"This book not only covers the history of the telescope but, more important, it describes the most recent breakthroughs in optical technology and engineering. It also describes the nature of light in detail, without having the disadvantages of a textbook on physics."**--Charles Hughes,** ***Twenty-first Century Science and Technology***

"The book covers everything from the history and workings of the very earliest telescopes to the science behind modern techniques such as interferometry. If you have ever wondered why telescopes need to be sited on remote mountain tops, or why they have to be so big, Anderson--who is an expert in telescope design with the US Air Force Academy--will tell you. The level of technical detail should be satisfying enough for even the professional astronomer, but the book is also arranged so that non-experts can happily skip any sections

that get too technical without losing track of the narrative."**--*Physics World***

"Although not apparently aimed at the academic market, it would be a worthwhile read for undergraduate students wanting to gain an overview of modern techniques in optical astronomy."**--Fred Watson, *Observatory Magazine***

"Written in a clear and accessible style, most of Andersen's story will be familiar to historians and amateur astronomers, but perhaps it will prove useful for a general reader who is looking for a gentle introduction to more detailed and comprehensive treatments."**--W. Patrick McCray, *Technology and Culture***

"I really enjoyed the great detail put into the book and the sure knowledge of the author--a research physicist who works for the United States Air Force Academy. The book is aimed at those who already know some astronomy, but who yearn to know more about this fascinating field. I . . . recommend it strongly."**--David Mannion, *Popular Astronomy***

From the Back Cover

"As we approach the International Year of Astronomy, the four-hundredth anniversary of Galileo's turning a telescope on the heavens, Geoff Andersen has produced an interesting book on the centuries' progress in optical observations. Chapters on telescopes used for surveillance and on a series of astronomical discoveries add interest beyond discussions of the telescopes themselves."**--Jay M. Pasachoff, Field Memorial Professor of Astronomy, Williams College**

"This book covers both the science of astronomy and the telescope technology that underlies astronomical discoveries. This balance enhances our appreciation of telescopes as engineering marvels, and it increases our understanding of what the operators of these instruments are trying to accomplish."**--Richard Kron, University of Chicago**

"*The Telescope* is an extensive and thorough look at the telescope in all its modern variants, and the only book like it that I know of. I enjoyed reading it, and I'm sure that many others will too."**--Robert J. Vanderbei, Princeton University**

About the Author
Geoff Andersen is a research physicist at the United States Air Force Academy, where he studies telescope and microscope design, holography, and remote sensing. He has worked on projects funded by the U.S. Air Force and NASA.

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