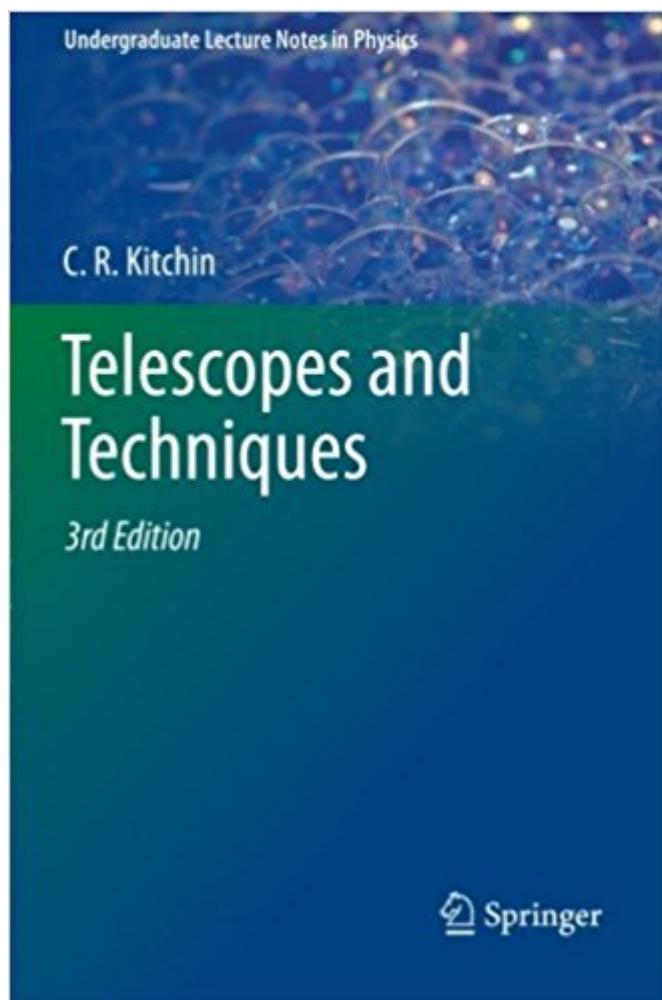


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# Telescopes And Techniques (Undergraduate Lecture Notes In Physics)



## Synopsis

“Telescopes and Techniques” has proved itself in its first edition, having become probably one of the most widely used astronomy texts, both for numerate amateur astronomers and for astronomy and astrophysics undergraduates. The first and second editions of the book were widely used as set texts for introductory practical astronomy courses in many universities. This book guides the reader through the mathematics, physics and practical techniques needed to use telescopes (from small amateur models to the larger instruments installed in many colleges) and to observe objects in the sky. Mathematics to around Advanced Placement standard (US) or A level (UK) is assumed, although High School Diploma (US) or GCSE-level (UK) mathematics plus some basic trigonometry will suffice most of the time. Most of the physics and engineering involved is described fully and requires no prior knowledge or experience. This is a “how to” book that provides the knowledge and background required to understand how and why telescopes work. Equipped with the techniques discussed in this book, the observer will be able to operate with confidence his or her telescope and to optimize its performance for a particular purpose. In principle the observer could calculate his or her own predictions of planetary positions (ephemerides), but more realistically the observer will be able to understand the published data lists properly instead of just treating them as “recipes.” When the observer has obtained measurements, he/she will be able to analyze them in a scientific manner and to understand the significance and meaning of the results. “Telescopes and Techniques, 3rd Edition” fills a niche at the start of an undergraduate astronomer’s university studies, as shown by it having been widely adopted as a set textbook. This third edition is now needed to update its material with the many new observing developments and study areas that have come into prominence since it was published. The book concentrates on the knowledge needed to understand how small(ish) optical telescopes function, their main designs and how to set them up, plus introducing the reader to the many ways in which objects in the sky change their positions and how they may be observed. Both visual and electronic imaging techniques are covered, together with an introduction to how data (measurements) should be processed and analyzed. A simple introduction to radio telescopes is also included. Brief coverage of the most advanced topics of photometry and spectroscopy are included, but mainly to enable the reader to see some of the developments possible from the basic observing techniques covered in the main parts of the book.

## Book Information

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## Customer Reviews

From the reviews of the third edition: "Telescopes And Techniques is a book that would be helpful for every new telescope owner, and of interest to also more seasoned amateur astronomers, but it will be a real gem for students just starting to learn about observational astronomy. Kitchin's "Telescopes And Techniques" bridges the gap between being a textbook of practical astronomy and a handbook of telescope maintenance and use. a very informative and well structured book that will definitely be consulted even after having been read the first time." (Kadri Tinn, AstroMadness.com, January, 2014)

Telescopes and Techniques has proved itself in its first two editions, having become probably one of the most widely used astronomy texts, both for amateur astronomers and astronomy and astrophysics undergraduates. Both earlier editions of the book were widely used for introductory practical astronomy courses in many universities. In this Third Edition the author guides the reader through the mathematics, physics and practical techniques needed to use today's telescopes (from the smaller models to the larger instruments installed in many colleges) and how to find objects in the sky. Most of the physics and engineering involved is described fully and requires little prior knowledge or experience. Both visual and electronic imaging techniques are covered, together with an introduction to how data (measurements) should be processed and analyzed. A simple introduction to radio telescopes is also included. Brief coverage of the more advanced topics of photometry and spectroscopy are included, but mainly to enable the reader to see some of the developments possible from the basic observing techniques covered in the rest of the book. For

anyone intending to enter astronomy as a professional, an understanding of the physics is essential - and this newest version of Telescopes and Techniques is one of the best starting points!

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