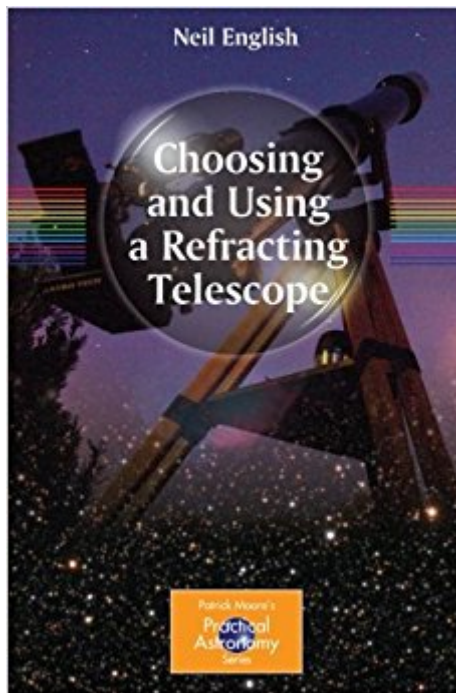




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# Choosing And Using A Refracting Telescope (The Patrick Moore Practical Astronomy Series)



## Synopsis

Choosing and Using a Refracting Telescope has been written for the many amateur astronomers who already own, or are intending to purchase, a refracting telescope – or perhaps to complement their existing arsenal of larger reflecting telescopes – or for the specialist who requires a particular refractor for serious astronomical applications or nature studies. Four hundred years ago, during the winter of 1609, a relatively unknown Italian scientist, Galileo Galilei designed a spyglass with two crude lenses and turned it skyward. Since then, refractors have retained their dominance over all types of reflector in studies of the Moon, planets and double stars because of the precision of their optics and lack of a central obstruction in the optical path, which causes diffraction effects in all commercially-made reflectors. Most mature amateur astronomers got started with a 60mm refractor, or something similar. Thirty years ago, there was little choice available to the hobbyist, but in the last decade long focus crown-flint achromats have moved aside for some exquisitely crafted apochromatic designs offered by leading commercial manufacturers. There has been a huge increase in the popularity of these telescopes in the last few years, led by a significant increase in the number of companies (particularly, William Optics, Orion USA, StellarVue, SkyWatcher and AstroTech) who are now heavily marketing refractors in the amateur astronomical magazines. In Choosing and Using a Refracting Telescope, well-known observer and astronomy writer Neil English celebrates the remarkable history and evolution of the refracting telescope and looks in detail at the instruments, their development and their use. A major feature of this book is the way it compares not only different classes of refractor, but also telescopes of each class that are sold by various commercial manufacturers. The author is perhaps uniquely placed to do this, having used and tested literally hundreds of different refracting telescopes over three decades. Because it includes many diverse subjects such as imaging with consumer-level digital cameras, imaging with webcams, and imaging with astronomical CCD cameras – that are not covered together in equal depth in any other single volume – Choosing and Using a Refracting Telescope could become the – refractor bible – for amateur astronomers at all levels, especially those who are interested in imaging astronomical objects of every class.

## Book Information

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## Customer Reviews

From the reviews: "Dr. Neil English is no stranger to the astronomical community. His knowledge of telescope optics is highly respected, and here he endeavours to lay down all his knowledge in a concise and thorough manner. He opens the book with a wonderful overview of the history of the telescope. This book something you really want to own, as it's a guide not only to what is achievable by anyone with modest equipment, but also what to aspire to. Thoroughly recommended." (Nick Howes, Astronomy Now Online, May, 2011) "Neil English opens with a brief history of refractor design, including the contributions of Lippershey, Galileo and Huygens, amongst others. The text is clearly written and there's plenty of useful data in the appendix. It's a valuable resource for anyone thinking about buying a refractor or who wants to learn more about the history and development of this iconic scientific instrument." (Mark Parrish, BBC Sky at Night Magazine, June, 2011) "Having owned around a dozen refractors over the years ranging from a lowly 40mm refractor, through several antique examples to a go-to refractor I was keen to read a book that promised to reinforce my love for the prince of telescopes. An excellent, up-to-date book containing much more than I have outlined in this review. English communicates his passion for refractors, and the book comes to life with user accounts of refractors old and new." (Peter Grego, Popular Astronomy, July-August, 2011) "Value to have accessible a comprehensive guide to the availability and use of refractors, which have a special attraction and romance especially for those who have used and appreciated the best of them. The short but useful appendices include glossaries of terms and formulae, and data on a selection of double stars which can be used for testing refractors of various apertures. Even for those with only the slightest interest, it

would certainly inspire them. (R. A. Marriott, *The Observatory*, Vol. 131 (1224), October, 2011)

The refracting telescope has a long and illustrious past. Here's what the author says about early telescopes and today's refractors: "Four centuries ago, a hitherto obscure Italian scientist turned a home-made spyglass towards the heavens. The lenses he used were awful by modern standards, inaccurately figured and filled with the scars of their perilous journey from the furnace to the finishing workshop. Yet, despite these imperfections, they allowed him to see what no one had ever seen before – a universe far more complex and dynamic than anyone had dared imagine. But they also proved endlessly useful in the humdrum of human affairs. For the first time ever, you could spy on your neighbor from a distance, or monitor the approach of a war-mongering army, thus deciding the fate of nations. "The refractor is without doubt the prince of telescopes. Compared with all other telescopic designs, the unobstructed view of the refractor enables it to capture the sharpest, highest contrast images and the widest usable field. No other telescope design can beat it on equal terms. From a practical point of view, refractors are the most comfortable and least troublesome telescope to observe with. They require little maintenance and cool down rapidly to allow you to observe in minutes rather than hours. Because a refractor has more back focus than almost any other form of telescope, it can accept the widest range of accessories, including filters, cameras, and binoviewers. • Explore in this book what makes refractors such a good choice for amateur astronomers and how to choose the right one for you. Also get some great tips on how to use your new refractor. Get started now, seeing for yourself the dazzling and complex universe first opened to human sight more just 400 years ago.

Neil English has a passion for refractors and he isn't afraid to sing its praises! Nowadays, it would seem that refractors have taken a back seat to more popular, compact designs like the Schmidt-Cass, Maksutov, or amateur astronomy's workhorse, the Newtonian. But Mr. English pleads the case for the iconic refractor and the quality of its still superior images. He covers every design type with in-depth chapters ranging from; the history of the refractor, the traditional classical f/15 refractor, instruments of faster ratios, special dispersion glass, apochromatics, and the future of the refracting telescope. English also devotes chapters to the refractor's peculiarity of design and presents a strong case as to why the venerable, classical f/15 refractor still reigns supreme. The closing chapter covers the classical refractor's more recent popularity and quiet comeback. Neil English loves refractors and his enthusiasm sometimes leaps off the page. But, his work is

methodical and he backs his observations and examples with hard evidence, calling on optical experts and professional astronomers to rally for his cause. If you are a hardcore refractor man, Neil English is preaching to the choir. If you are considering purchasing a refractor, this book is a revelation. If you like telescopes, this book is simply a joy to read. I have been a dedicated refractor owner, and user, for more than 34 years. Looking through a long focus, "classical" refractor for the first time is an experience that is truly sublime. And, it stays with some amateur astronomers for a lifetime.

If you are a refractor affectionado you will love this book. I have used telescopes for over 45 years and I thought I knew everything about refractors and I was wrong (e.g. defocus tolerance and the affects on seeing). The book has a breezy writing style that is upbeat and fun to read. Mr. Neil English is passionate about refractors and it is infectious! My only complaint is that the book places too much emphasis on reviewing telescopes (which will become outdate over time) and I would like to seen more emphasis on testing and optical performance theory. To the author's credit he did an excellent job explaining complex optical theory in a very digestable manner. A few typos were noted and some of the graphs were hard to decipher (due to lack of a color legend). Most of the books emphasis is on visual observing and not digital imaging. Some readeres may not agree with the author that the old telescopes were in many cases better than the new genera of APOs. I do agree with the author's statement that a properly made achromat with a slow f/ratio is really hard to beat for depth of focus, sharpness and contrast. I have seen it with my own eyes! When the book came to an end I found myself wanting more.

Books in this series are about 10%-20% too expensive, but the size of this publisher's market is small, and given the quality of the information, the images and the author's style, I would definitely purchase this book again. I was planning to read it through systematically, but my curiosity for what came next drove me rapidly forward, and now I must go back and move ahead with pen in hand, underlining what's important for me. The author details carefully the differences between models and types of optical tubes that virtual beginners like me might too easily gloss over or overlook entirely. Refractors are but one of the three basic types of telescope; newcomers should learn about all three types before making a serious purchasing decision. This text belongs in every amateur astronomer's library.

If you are thinking about buying a refractor telescope, read this book first. By the time you are done,

you will understand the differences and similarities between Achromatic and Apochromatic refractors and which type is best for you. You will learn about the types of "glass" used in refractor lenses and why some kinds of glass are better than others. This is important because the type of glass used on the telescope has a direct bearing on its ability to snap to focus and diminish or eliminate false colors. The kinds of glass used also has a direct impact on your checkbook. Generally speaking, the better the glass, the more costly the scope. Choosing and Using a Refracting Telescope was published in 2011 and is pretty much up-to-date in its product information, particularly in regard to which telescope manufacturers are leaders in their field. The book covers telescopes of all sizes and prices and makes comparison shopping much easier. I particularly like the fact the Mr. English speaks his mind about why one scope may be better than another and he is not hesitant to make recommendations. Neil English is also an excellent writer so reading the book is a pleasant experience. He takes difficult subjects and presents them in such a way that even amateur astronomers can understand them. I rate this one 5 stars.

I've been a very interested in cosmology and astronomy most of my life, but just this year got seriously interested in actually telescopes and astro-photography. I own a Newtonian, a Catadioptric, and a small Refractor. I have noticed that most of the best astrophotographs are take with refractors, so I thought I'd seriously look into getting a decent one for imaging so I bought Mr. English's book. I have to say that of all the literature I have collected on telescopes and astronomy, (I seem to have bought them all) this is, by far, the most informative, up to date, and enjoyable of them all. I have read and re-read this book and always learns something new. The author thoroughly covers the subject matter with succinct explanations of the various types of refractor design and what to expect as far as performance. If you are thinking of buying a refractor, this book is well worth reading. You can tell that the author enjoys refractors. This book is one I will keep!

Learning about the different types of glass, it would have been great to devote a chapter to the glass properties and why one is better than another. The book hints on the but I want the full scoop. Overall it's an extremely interesting read. Highly recommend. TH

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