



Preface The Appeal of Yesteryear

*What has been is what will be,
and what has been done is what will be done;
there is nothing new under the sun.
Is there a thing of which it is said,
'See, this is new'?
It has already been, in the ages before us.*

—Ecclesiastes 1:9-10

What a wonderful thing a telescope is! By altering the path of light, using lenses, mirrors, or a combination of both, this awe-inspiring construct of the human mind can let you embark on a journey across hundreds and thousands of light years of space, to witness celestial glories utterly beyond the reach of naked human eyes. How empowering it is to be able to glimpse details of our neighbor, the Moon, or the far distant planets from the comfort of one's own backyard. Telescopes are time machines, behoving us to contemplate the unfathomable natural beauty of the sky.

Telescopes are not mere inanimate objects either. They have personalities all of their own. Uncanny is the person who can't sit behind the eyepiece of a great, old telescope and not be moved by the experience, almost as if one were connecting with some deeply significant moment in the past, when curious minds observed things, perhaps even for the first time.

Over four centuries of time, this revolutionary instrument has evolved into a veritable pantheon of forms that bring the celestial realm down to Earth. They are as much part of our modern civilization as great literature is. After all, they help define humanity's soaring spirit and indefatigable curiosity for the world around us. And while contemporary telescopes continue to deliver the goods, it pays to remember that there really is nothing new under the Sun. Who can inform this author of a single

ground breaking discovery, an atmospheric feature on a distant planet perhaps, or maybe a lunar feature, double star or nebulous patch per chance, that was not seen (or could have seen) and noted by our telescopic ancestors? Necromancy and nostalgia, while certainly contributing to the allure of old telescopes, certainly can't explain why they performed so well. The truth, as we shall see, is that many instruments made decades and centuries ago are every bit as good (and in some cases even better) than do many mass-produced telescopes on the market today.

One of the great psychological charms of owning a classic 'scope is that, more often than not, they were hand-built by famous makers or their highly trained technicians. The owner has a direct link to the masters of the past, which, sadly, is not seen too often in the contemporary market with its emphasis on mass production. They are one off, bespoke items, forged from the sweat and blood of optical giants.

As we will discover, many telescopes used by astronomers of generations past were broadly the equal of those employed by our contemporaries. The historical record is clear in this respect, as we shall stumble upon while recounting the extraordinary allegory of the telescope makers from the days of yore. There is much ground to cover and the book, naturally enough, had to be fairly selective in the range of artisans discussed. A classic is best described as a perfectly recognizable form, or archetype if you will, that meets all the specifications of its genre. It usually represents something of lasting worth or with a timeless quality, expressing either its sentimental or objective value at auction. It might also embody the essence of an age or help bring to life fond memories of yesteryear. And while many of these antiquated telescopes command hefty price tags, especially where provenance can be verified, it is simply not true that a classic telescope need necessarily be expensive. One need only note the extraordinary resurgence in interest in the humble 60 mm refractor across the astronomy world to see the truth in this sentiment.

In this book, we shall explore the rich lore of telescopes past, from the small and personal spyglasses of Dollond to the great observatory behemoths designed by Alvan Clark & Sons, USA; Thomas Cooke & Sons, England; and Carl Zeiss of Germany. We will unveil the extraordinary success of Japanese optical firms in the early post-World War II era, where her opticians churned out objective lenses of superlative quality that found their way into cherished brands such as Unitron, Royal Astro, Goto and Swift, to name but a few.

The book will also chart the rise of the reflector telescope from its humble beginnings in Sir Isaac Newton's study at Cambridge, through to the construction of the first parabolic mirrors that enabled celebrated observers such as Sir William and Sir John Herschel to make such enormous leaps forward in our knowledge of the heavens and our place within it. We will recount the development of new technology that did away with heavy and cumbersome metal mirrors and their replacement with silvered glass substrates. Accordingly, we shall take a look at some of history's great mirror makers, including John Calver, John A. Brashear, and more recently, the late Tom Cave, as well as some celebrated Newtonian manufacturers, including Edmund Scientific and Criterion.

The twentieth century also saw great innovations in compact telescope designs, including the Maksutov- and Schmidt-Cassegrain telescopes. This investment in new technologies, particularly the marriage of electronics and optics, led directly to the extraordinary success of companies such as Questar, Celestron, and Meade.

The refracting telescope, in particular, has enjoyed a long and distinguished history among amateur and professional astronomers, with the simple crown and flint objective prescriptions serving their needs for centuries. That said, the secondary spectrum (false color) thrown up by achromatic object glasses impelled opticians to find new glass combinations, with improved color correction. But contrary to what most contemporary amateurs believe, that search had its origins in the eighteenth century, and by the end of the nineteenth century, real progress had been made in the workshops of Zeiss, Germany, and T. Cooke & Sons of York, England.

Interest in designing color free or apochromatic refractors waned a little throughout the first half of the twentieth century but gained momentum again in the 1970s when Japanese opticians, most notably those working for Takahashi, took up the gauntlet once again, bringing to market exciting new high-performance 3-inch refractors. This was followed in the early 1980s by innovators in the United States, including Fred Mrozek and Roland Christen, who designed a new range of oil-spaced triplet apochromats for the discerning amateur astronomer.

As well as describing fully functioning telescopes from memory lane, we shall also explore some restoration projects along the way, including the refurbishment of two of Sir Patrick Moore's most used telescopes – a fine 3-inch F/12 Broadhurst Clarkson, which he purchased as a young lad, as well as a larger 5-inch f/12 Cooke refractor – arguably Moore's most used telescope back in the day.

Finally, the antique telescope market will be discussed with a view to identifying realistic expectations and potential pitfalls of prospective investors. How important is provenance? Will replacing a mirror or lens increase the value of your antique 'scope? These and other questions will be answered as we draw the book to a close. So, in the meantime, pull up a chair and settle down to read about some of the most talked about telescopes in history and something of the personalities that made them.

Yours classically,

Neil English

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of Yesteryear

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