Foreword

Give credit to those who helped you so much

Unlike the "Big Bang," this book didn't just happen. It came into being because I have a debt to repay. I owe the many telescope makers before me who shared their ideas and made astronomy and telescope making one of the highlights of my life. In fact, telescope making has become an obsession for me. I want to acknowledge these talented people, starting with Sir Isaac Newton, by giving them the credit they deserve. More importantly, I want to pass along their ideas with mine so you too can build your own truss tube telescope and have a lifelong affair with astronomy.

Some of you already know me from the articles I wrote for *Telescope Making #35*, *#37*, *#41*, and *#44*. Those "how I built it" stories were extremely popular. In 1990, I became a professional telescope manufacturer because people were willing to pay me to build them a telescope like mine. Before long I had made over a hundred telescopes for others. At the same time amateurs and a few professional telescope makers were building telescopes based on my "Obsession." Within five years, the telescope I built and wrote about had become the most imitated design in the hobby.

This success is obviously a great source of personal satisfaction for me. Yet my contribution has been built on the ideas of others before me. As you read in later chapters how today's amateur telescope designs came about, you will realize why things are done they way they are. You will also realize that we are very lucky to be living in a time when so much is available to the amateur telescope maker.

This book shows you how to construct a high-performance, large-aperture Dobsonian telescope. As many amateur astronomers already know, Dobson's original design is fundamentally excellent. What I have done is taken Dobson's concepts and tried to realize their full potential.

Now there are nearly as many variations of the Dobsonian design as there are amateur telescope makers. But as different as they are, all share an important similarity: building them gave their makers a deep sense of accomplishment and pride. All of them are fun to use. Their very variety should encourage aspiring telescope makers. I have seen a great many Obsession clones at various star parties. Each of these telescopes reflects the desires, knowledge and skills of its builder.

So, if you don't want to build the Obsession design, feel free to try other de-

signs and to develop your own ideas. Think openly. Don't feel guilty if you want to alter things; that is your right as a telescope builder.

However, before you rush out and start sawing sheets of plywood, I want to encourage you to *actually read the text of this book*. Although you could probably make a successful telescope by copying what you see in the photos, you would miss out on the opportunity to understand fully what you are doing. Once you understand why the design works, you're equipped to build a telescope that is a top-notch performer.

Why do I say this? Since the designs appeared in *Telescope Making*, Richard and I have had the chance to examine hundreds of telescopes based on those articles. Although all of these telescopes seem to work acceptably well, some of them do not perform nearly as well as they could have. Read and learn. Think and study. Maybe this will sound old-fashioned, but it doesn't take much more time and effort to build a telescope that works really well, and you'll be a lot happier with it.

The design described in this book doesn't have any secrets. Everything is out in the open. Understanding the design boils down to basic high school algebra and physics. If those two words scare you, don't worry. Just knowing why different materials behave the way they do is a major step, and probably more important than the math. Once you develop a feel for the "whys" of telescope design, you'll be better equipped to manage the "hows" of their construction.

Besides, it's much more fun to do something when you know what you are doing. Those of you with serious math-phobia can get all the dimensions you need from the tables and plans. Don't let your math abilities—or any lack thereof—deter you from building your dream telescope.

But please be forewarned. Reading this book might—no, almost certainly *will*—affect your mind. Aperture fever is a serious illness, and building a big telescope often evokes obsessive-compulsive behavior. Because you are spending all your free time working on "the scope," you may discover that you are neglecting your loved ones. Chasing all over town for obscure fasteners. Devoting long hours to doodling out new ideas on paper. Spending too much money on equipment you feel you just "gotta have." Scrounging parts. Driving the countryside searching for dark sites. Becoming a recluse at New Moon. These are obsessive behaviors. If you develop these symptoms, try to remind yourself that the point of it all is to have some fun. And never forget that the stars will still be there tomorrow.

Next, I want to address a somewhat touchy subject: mirror making. Frankly, I don't recommend it. But I feel that it's only fair to recognize how important mirror making has been in amateur astronomy. It all goes back to 1921, when an arctic explorer named Russell Porter began writing articles for *Popular Astronomy* on how to make reflecting telescopes. Porter's practical advice soon earned him an eager following of amateur telescope makers in his native Vermont. Then *Scientific American* invited him to write two articles on the subject. Reader interest was so strong that in 1926, Albert "Unk" Ingalls at *Scientific American* encouraged Porter to help write what became the definitive work on the subject, *Amateur Telescope Making*.

By titling one of his first articles "The Poor Man's Telescope," Porter showed that he was a man in touch with his time. The article showed the would-be amateur astronomer how to make inexpensive mirrors for a reflecting telescope. During the Great Depression, folks had little disposable income but plenty of time. Almost everybody knew somebody who could run a lathe—what they lacked were the skills and know-how for making mirrors. No instructions were available, and even if you had the cash, nobody had mirrors for sale. The bottom line was: if you could make a mirror, you could own a telescope. For the next 50 years, mirror making was an integral part of amateur astronomy.

In 1951 a great French optician, Jean Texereau, wrote what would become a classic work, *How to Make a Telescope*. This book is still the bible of mirror making, so if you want to make your own mirrors, get this book.

Porter and Texereau deserve a standing ovation for their contributions to amateur astronomy. From 1921 through the 1970s, thousands of amateurs made reflectors, some as large as 12 inches in aperture, and a scattering made even larger mirrors. When someone said he had built his own telescope, it almost always meant he had made everything—including the primary mirror.

But mirror making is tedious, exacting, and slow. And homemade mirrors tend to be small—6 to 10 inches in diameter—which is a lot smaller than the mirror that you want for your large-aperture Dobsonian. For small mirrors, times have changed and the economic incentive has vanished: you can now buy a finished mirror for about the same price as you can buy the raw materials.

Of course, I can hear the dyed-in-the-wool mirror makers out there moaning and groaning. Yes, making a mirror is a great learning experience and I'll concede that you'll probably appreciate your telescope more if you grind and figure its mirror. No argument from me. But I don't do it and most other telescope makers don't grind their own mirrors any more either.

With all that said, you're probably wondering why we included a lengthy Appendix by optician Bob Kestner on making big, thin telescope mirrors. I suppose that I could make the excuse that Richard put me up to it, which is true, but the real reason is that we both want you to understand everything that goes into making a high-quality telescope. Furthermore, as this book travels around the world, it will reach places where big, thin, commercially made telescope mirrors are not available locally and are too expensive to import. Even in the United States, you can save a bundle if you grind, polish and figure a large telescope mirror. If those reasons make sense to you, then grasp the nettle and grind the mirror.

Before concluding, I want to be 100 percent upfront about my little company, Obsession Telescopes. We make and sell complete telescopes. Some of the components in the commercial telescope have been custom designed, and others are hard to locate. Rest assured you can make everything for an Obsession-style telescope by following the instructions in this book. Sources for all of the materials and off-the-shelf parts are provided in an Appendix in the back of the book.

This book has benefited from Harold R. Suiter, Mel Bartels, Thomas Fire-

baugh, John Koester, David Groski, Chris Bechtler and Robert Lombardi who read and commented on the manuscript prior to publication. Richard and I appreciate their assistance which has made this a better book because of their efforts.

Well, that concludes my introduction. As you read, once in a while remember this: you have fallen heir to knowledge that took thousands of amateur telescope makers seven decades of building telescopes and two decades of building Dobsonians to learn. Consider how fortunate you are to be living in a time when you can build a huge telescope, drive to a remote site where the sky is black, and get set up for observing in a few minutes. You can see every nebula, cluster, and galaxy in the *New General Catalog* and thousands more besides. Have you died and gone to heaven, or what?

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