

# Making Refracting Telescope Alberto Roberts: Step-by-Step Guide for Amateur Astronomers

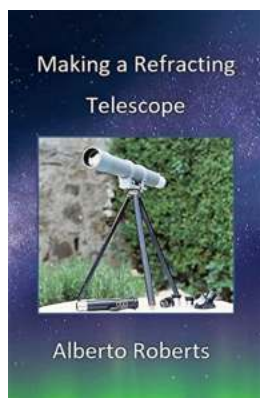
Have you ever dreamt of exploring the mysteries of the universe? Alberto Roberts, a renowned amateur astronomer, has developed a simple and affordable way for anyone to build their own refracting telescope. In this article, we will guide you through the step-by-step process of making a refracting telescope following Alberto Roberts' instructions. Get ready to embark on a journey to the stars!

## What is a Refracting Telescope?

A refracting telescope is a type of optical telescope that uses a lens to gather and focus light, providing a magnified view of celestial objects. Unlike reflecting telescopes that use mirrors, refracting telescopes rely on lenses to bend or refract light and form an image. These telescopes have a long and fascinating history, with many famous astronomers relying on them to make groundbreaking astronomical discoveries.

## Materials Needed

Before you start building your own telescope, gather the following materials:



## MAKING A REFRACTING TELESCOPE

by Alberto Roberts (Kindle Edition)

★★★★☆ 4.1 out of 5

Language : English

File size : 4128 KB

Text-to-Speech : Enabled

Screen Reader : Supported

Enhanced typesetting : Enabled

Word Wise : Enabled

Print length : 47 pages  
Lending : Enabled



- A lens with a focal length of at least 1 meter
- A sturdy cardboard tube with an inner diameter matching the lens size
- A smaller cardboard tube with an inner diameter slightly larger than the eyepiece lens
- A lens cloth for cleaning the lenses
- A tripod or a stable mount for the telescope
- A black paint or tape to reduce internal reflections within the telescope

## Step-by-Step Guide

Follow these steps to assemble your refracting telescope:

### Step 1: Prepare the Tubes

Measure and cut the cardboard tubes according to the desired length. Make sure both tubes fit snugly inside each other, allowing smooth movement of the inner tube.

### Step 2: Paint or Tape the Tubes

Use black paint or tape to coat the inside of the larger tube. This will minimize internal reflections and enhance image quality.

### Step 3: Attach the Lens

Securely fix the larger lens at one end of the larger tube. Ensure it is centered and aligned with the tube. Use tape or glue to hold it in place.

#### **Step 4: Install the Eyepiece**

Insert the smaller tube inside the larger tube. Attach the eyepiece lens at the other end of the smaller tube. Again, ensure it is centered and aligned correctly.

#### **Step 5: Align the Tubes**

Adjust the position of the smaller tube until the image appears clear when you look through the eyepiece. Ensure the lens and eyepiece are aligned with each other and perpendicular to the tube axis.

#### **Step 6: Ensure Stability**

Place your newly constructed telescope on a stable mount or tripod. Make sure it is securely fixed and doesn't wobble. This will help you achieve a steady and focused view of celestial objects.

#### **Discover the Universe**

Now that your refracting telescope is complete, it's time to explore the wonders of the universe. Point your telescope towards the night sky and gaze at the countless stars, the serene beauty of the Moon, and even distant planets. As you continue your journey as an amateur astronomer, don't forget to clean the lenses regularly and experiment with different eyepieces to enhance your viewing experience.

Building your own refracting telescope using Alberto Roberts' instructions is a fantastic way to dive into the world of astronomy. This project not only provides a practical learning experience but also allows you to witness the extraordinary

beauty of our universe. So, gather your materials, assemble your telescope, and get ready for an astronomical adventure like no other!



## MAKING A REFRACTING TELESCOPE

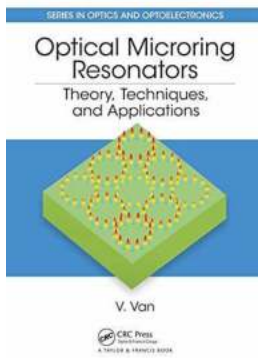
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Making a refracting telescope guides you through the process of making your own refractor using inexpensive materials and basic workshop tools. The making of each component is described in detail with step by step instructions, advice, helpful photographs and diagrams. The book was originally written in 1991 but was not published then. It focuses on the making of an instrument using a specific 48mm lens which was available at the time. However, I have since used the techniques described in the book to make larger instruments, including a 102mm (4 inch) Refractor. A photograph of this instrument is included in the book.



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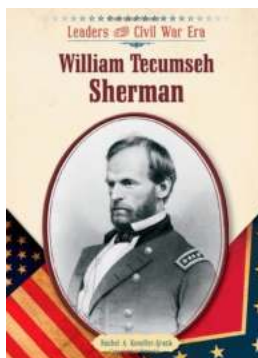
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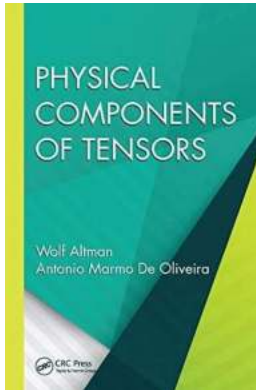
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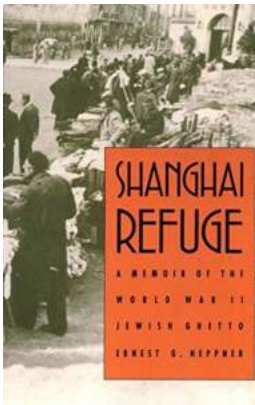
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