# Limited Warranty

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05/04

# Instruction Manual

## 50AZ-T 50mm Compact Refractor Telescope

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The general rule regarding power: Only use as much magnification as supports a steady, well-defined image. The stability of the air varies and is one reason why having various eyepieces is highly desirable. *Higher powers are no guaranty of better images; in fact, the opposite is often true. Keep in mind, that land viewing and wide-field, deep-space observation generally operate best with low-powered eyepieces.*

## MAINTENANCE

The Meade 50mm Compact Refractor telescope should be stored in a dry and dust-free location. It should not be stored in direct sunlight. Avoid overcleaning the lens. A little dust on the the lens hardly affects image quality.

## SPECIFICATIONS

| | |
|---|---|
| Objective (main) lens focal length | 350mm |
| Objective lens diameter | 50mm |
| Mounting type | Table-top Altazimuth |
| Eyepieces | K17.5mm, K12mm, K9mm |
| Barlow lens | 3X |
| Roof Prism | Included |
| Soft carry case | Included |
| Table top tripod | Included |

in the upper atmosphere can cause the images to “shimmer” in the eyepiece. Reduce power until the image steadies. Keep in mind that a bright, clearly resolved, but smaller image will show far more interesting detail than a larger, dimmer, fuzzy image.

7. A number of fascinating objects are visible through your Meade 50mm compact refractor:

- **Jupiter:** Jupiter has cloud belts across its surface. It’s four major moons change position around the planet each night. Jupiter has cloud belts across its surface.
- **Saturn**: Saturn’s ring system is an astronomical favorite.
- **The Moon:** Our Moon offers craters, mountain ranges and fault lines. The Moon is best observed during its crescent or half phase when sunlight strikes the Moon’s surface at an angle. Resulting shadows add a sense of depth to the view. No shadows are visible during a full Moon, causing the Moon’s surface to appear flat and low contrast.
- **Deep-Space:** These objects are best viewed at a dark site, away from city and other lights. Such objects include nebulae, galaxies, multiple star systems, and star clusters.
- **Terrestrial objects:** Your telescope may also be used for high resolution land viewing. Terrestrial observations should almost always be made using a low power eyepiece (50X or less) for bright, sharp images. Land objects offer limited applications at higher powers because the telescope is being pointed through the thickest part of the Earth’s atmosphere.

## POWER

The power, or magnification, of a telescope when used with a particular eyepiece is determined by two factors: the focal length of the telescope’s main (objective) lens and the focal length of the eyepiece being used. The Barlow lens doubles the power of an eyepiece. To use the 3X Barlow lens, place the Barlow into the telescope focuser tube, followed by the eyepiece.

The magnification values available with your eyepieces are as follows:

| Eyepiece | Power | With 3X Barlow Lens |
|---|---|---|
| K17.5mm | 20X | 60X |
| K12mm | 30X | 90X |
| K9mm | 40X | 120X |



# Meade 50mm Compact Refractor Telescope

Fig. 1: Telescope Features

1. Optical Tube
2. Focus Knob
3. Eyepiece
4. Eyepiece Thumbscrew
5. Roof Prism
6. Diagonal Prism Thumbscrew
7. Altitude Control Handle
8. Tripod leg
9. Tripod Securing Screw
10. Tripod holder
11. Tripod Platform
12. Dew Shield

# WARNING:

RECOMMENDED FOR CHILDREN OVER THE AGE OF 5 WITH ADULT SUPERVISION ONLY

**NEVER USE THE 50AZ-T COMPACT REFRACTOR TELESCOPE TO LOOK AT THE SUN!** LOOKING AT OR NEAR THE SUN WILL CAUSE INSTANT AND IRREVERSIBLE DAMAGE TO YOUR EYE. EYE DAMAGE IS OFTEN PAINLESS, SO THERE IS NO WARNING TO THE OBSERVER THAT DAMAGE HAS OCCURRED UNTIL IT IS TOO LATE. DO NOT POINT THE TELESCOPE AT OR NEAR THE SUN. DO NOT LOOK THROUGH THE TELESCOPE AS IT IS MOVING. CHILDREN SHOULD ALWAYS HAVE ADULT SUPERVISION WHILE OBSERVING.

## INTRODUCTION

The 50AZ-T Compact Refractor is an easy to operate telescope, designed for both astronomical and terrestrial observing. Please take a few moments to read the instruction manual and familiarize yourself with its features.

## INSTALLATION:

1. To attach the optical tube to the tripod, first unfold the tripod legs **(8, Fig. 1)**. Place the tripod holder **(10, Fig. 1)** on the optical tube's **(1, Fig. 1)** tripod platform **(11, Fig. 1)** and tighten the attachment screw **(9, Fig. 1)** to a firm feel.
2. Slide the diagonal prism **(5, Fig. 1)** into the tube at the back of the optical tube and tighten the diagonal prism thumbscrew **(6, Fig. 1)** to a firm feel.
4. Place an eyepiece **(3, Fig. 1)** into the diagonal prism and tighten the eyepiece thumbscrew **(4, Fig. 1)** to a firm feel.

## TO ACHIEVE A CLEAR AND SHARP FOCUS:

1. Place the telescope on a stable surface.
2. View objects that are at least 30 feet away.
3. Rotate the altitude control handle **(7, Fig. 1)** to loosen the handle. Use the handle to adjust both the horizontal and vertical position of the optical tube. When you have located an object you wish to view, tighten the handle again to lock in place.
4. Look through the eyepiece **(3, Fig. 1)** and rotate the focus knob **(2, Fig. 1)**. Turn the knob with a slow and gentle motion until the object is in sharp focus.



## USING THE TELESCOPE

When the telescope is assembled, you are ready to begin observations.

1. Observing land objects during the daytime is a good way to become accustomed to the functions and operations of the telescope. At night, try observing the Moon first, if it is visible, or a bright star.
2. Use the K17.5mm eyepiece and center an object in the telescope's field of view. The included K17.5mm eyepiece is the best eyepiece to use for the initial finding and centering of an object. The low power K17.5mm eyepiece presents a bright, wide field of view, ideal for terrestrial and general astronomical observing.

   For lunar and planetary viewing, switch to a higher power eyepiece such as the K9mm. Also consider using the provided 3X Barlow lens. If the image starts to become fuzzy as magnification is increased—back down to a lower power.
3. If you are observing an astronomical object (the Moon, a planet, a star, etc.), you will immediately notice that the object moves in a rather slow but continuous motion across the telescopic field of view. This motion is caused by the rotation of the Earth which results in the apparent motion of the object in the telescope's field of view.

   To keep astronomical objects centered, simply move the telescope on one or both of its axes (vertical and/or horizontal), using the altitude control handle **(7, Fig. 1)** as appropriate. At higher powers, astronomical objects will seem to move through the field more rapidly. Place the object on the edge of the field of view and watch as it drifts to the opposite side, then reposition the telescope so the object can drift through the field again.
4. Avoid touching the eyepiece while observing. Vibrations resulting from such contact will cause the image to move. Viewing from the upper floors of a building may also introduce image movement.
5. Allow a few minutes for your eyes to become "dark adapted" before you begin any serious observations.
6. Some atmospheric conditions can distort an observed image. Planets, in particular, viewed while low on the horizon, lack sharpness. When observed higher in the sky, a planet will often appear to be more steady and have greater contrast. Turbulent air