

## CELTICBIRD 70400

# CELTICBIRD 70mm Aperture 400mm Astronomical Refracting Telescope User Manual

Model: 70400

## 1. INTRODUCTION

This manual provides detailed instructions for the assembly, operation, and maintenance of your CELTICBIRD 70mm Aperture 400mm Astronomical Refracting Telescope. Designed for both beginners and students, this telescope offers clear views of celestial objects and terrestrial landscapes. Please read this manual thoroughly before using your telescope to ensure proper setup and safe operation.

### What's Included:

- Telescope Tube
- Adjustable Aluminum Alloy Tripod
- K20mm Eyepiece (20x magnification)
- K12.5mm Eyepiece (32x magnification)
- 5x24 Finderscope
- Smartphone Adapter
- Diagonal Mirror
- Instruction Manual

## 2. SAFETY INFORMATION

**WARNING:** Never look directly at the sun through the telescope or finderscope without a professionally made solar filter. Permanent and irreversible eye damage, including blindness, can result. Always supervise children when using the telescope. Ensure all components are securely fastened before use to prevent accidental damage or injury.

### 3. PRODUCT COMPONENTS

Familiarize yourself with the various parts of your CELTICBIRD telescope:





With 20mm eyepiece  
Magnification: 20x



With 12.5mm eyepiece  
Magnification: 32x



**Image 3.2:** Close-up of the K20mm eyepiece (20x magnification) and K12.5mm eyepiece (32x magnification), along with the main telescope tube.

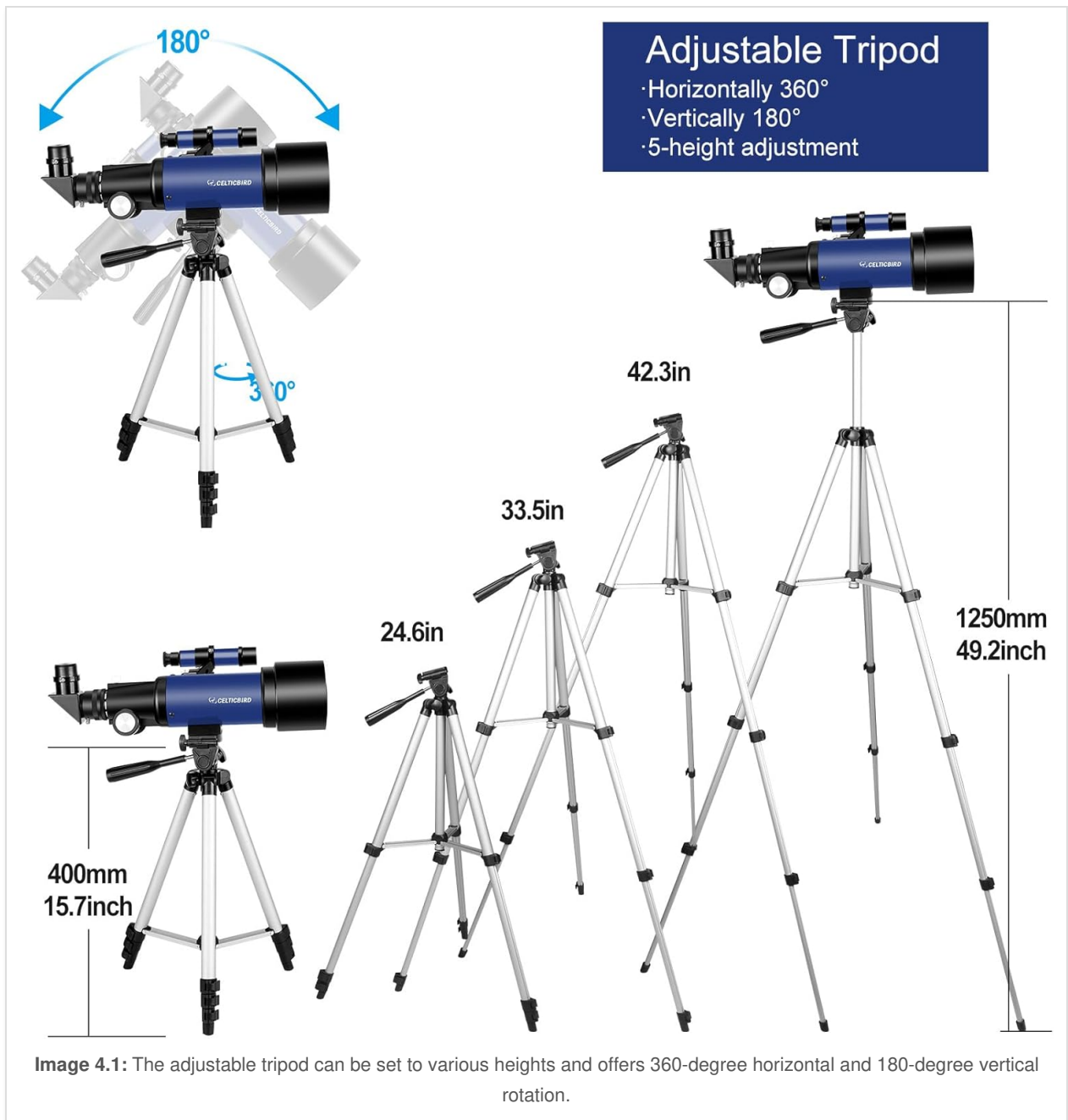


**Image 3.3:** The complete telescope assembly including the phone adapter and both eyepieces.

## 4. SETUP GUIDE

Follow these steps to assemble your telescope:

1. **Unpack Components:** Carefully remove all parts from the packaging.
2. **Set up the Tripod:**  
Spread the tripod legs apart until they are fully extended and stable. Adjust the height of the tripod legs using the quick flip locks to your desired viewing level. The tripod is adjustable from 15.7 inches to 49.2 inches.



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**Video 4.1:** This video demonstrates the easy setup of the tripod and attachment of the telescope tube. It shows how to adjust the tripod legs and secure the main telescope unit.

### 3. Attach the Telescope Tube:

Mount the telescope tube onto the tripod's mounting platform. Secure it firmly using the provided screws or clamps. Ensure the tube is stable and does not wobble.

### 4. Install the Finderscope:

Locate the finderscope and its bracket. Attach the finderscope to the designated slot on the main telescope tube. Tighten the screws to hold it in place. The finderscope helps in quickly locating objects before viewing them through the main eyepiece.

### 5. Insert the Diagonal Mirror:

Insert the diagonal mirror into the focuser of the telescope. This component redirects the light at a 90-degree angle, providing a more comfortable viewing position.

### 6. Insert an Eyepiece:

Choose an eyepiece (K20mm for 20x magnification or K12.5mm for 32x magnification) and insert it into the diagonal mirror. Secure it with the small screw on the side of the diagonal mirror.

### 7. Attach the Smartphone Adapter (Optional):

If you wish to capture photos or videos, attach the smartphone adapter to the eyepiece. Place your

smartphone into the adapter and align its camera lens with the eyepiece. Adjust the adapter to ensure a secure fit and clear view.



**Image 4.2:** The smartphone adapter allows you to connect your phone to the telescope for photography and videography.

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**Video 4.2:** This video demonstrates the assembly of the telescope, including attaching the finderscope and eyepieces, and setting up the smartphone adapter.

## 5. OPERATING INSTRUCTIONS

### 5.1. Using the Finderscope

The 5x24 finderscope has a wider field of view than the main telescope, making it easier to locate objects. Look through the finderscope and center the desired object in its crosshairs. Once centered, the object should be visible in the main telescope's eyepiece.

### 5.2. Focusing

After locating an object with the finderscope, look through the main eyepiece. Slowly turn the focus knob located on the side of the telescope tube until the image appears sharp and clear. Fine-tune the focus for optimal viewing.

### 5.3. Changing Magnification

Your telescope comes with two eyepieces: K20mm (20x magnification) and K12.5mm (32x magnification). To change magnification, loosen the screw on the diagonal mirror, carefully remove the current eyepiece, and insert the desired one. Re-tighten the screw. Start with the lower magnification (K20mm) to locate objects, then switch to higher magnification (K12.5mm) for more detailed views.

### 5.4. Observing Celestial Objects

- **Moon:** The moon is an excellent first target. Its craters and features are easily visible.
- **Planets:** Brighter planets like Jupiter and Saturn can be observed, though details may vary depending on atmospheric conditions and magnification.
- **Stars:** Individual stars will appear as points of light. The telescope is ideal for observing star clusters and some nebulae.



Image 5.1: Examples of objects that can be viewed with the telescope, including celestial bodies like the Moon and nebulae, as

## 5.5. Terrestrial Viewing

Your telescope can also be used for daytime viewing of distant objects on Earth, such as wildlife, landscapes, or distant buildings. The diagonal mirror provides an upright image, suitable for terrestrial observation.

## 5.6. Using the Smartphone Adapter for Photography/Videography

Once your smartphone is securely attached and aligned with the eyepiece, open your phone's camera app. Adjust the focus on the telescope until the image is clear on your phone screen. You can then capture photos or record videos of your observations. Experiment with your phone's zoom features for closer views.

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**Video 5.2:** This video demonstrates a child using the telescope, showing how to adjust the tripod and view through the eyepiece. It also highlights the ease of use for young astronomers.

## 6. MAINTENANCE AND CARE

- **Cleaning Lenses:** Use a soft, lint-free cloth specifically designed for optical lenses. Gently wipe the lens surfaces. For stubborn smudges, use a small amount of optical lens cleaning fluid on the cloth, not directly on the lens.
- **Cleaning the Body:** Wipe the telescope tube and tripod with a soft, damp cloth. Avoid using abrasive cleaners or solvents.
- **Storage:** When not in use, store the telescope in a dry, dust-free environment. Keep the lens caps on to protect the optics. If possible, store it in its original packaging or a protective case.
- **Handling:** Always handle the telescope with care. Avoid dropping it or subjecting it to harsh impacts, which can misalign the optics.

## 7. TROUBLESHOOTING

- **Image is blurry:**
  - Adjust the focus knob slowly until the image is sharp.
  - Ensure the eyepiece is fully inserted and secured.
  - Check for condensation on the lenses; allow the telescope to acclimate to the ambient temperature.
- **Cannot find objects:**
  - Ensure the finderscope is properly aligned with the main telescope.
  - Start with the lowest magnification eyepiece (K20mm) to get a wider field of view.
  - Practice locating terrestrial objects during the day to familiarize yourself with the controls.
- **Image is dim:**
  - Ensure the lens caps are fully removed from both the main objective lens and the finderscope.
  - Higher magnification eyepieces will naturally result in dimmer images.

- Observe from a location with minimal light pollution for celestial viewing.
- **Telescope is unstable:**
  - Ensure the tripod legs are fully extended and locked.
  - Place the tripod on a flat, stable surface.
  - Tighten all knobs and screws on the tripod and telescope mount.

## 8. SPECIFICATIONS

Feature	Detail
<b>Model</b>	70400
<b>Aperture</b>	70mm
<b>Focal Length</b>	400mm (f/5.7)
<b>Eyepieces</b>	K20mm (20x), K12.5mm (32x)
<b>Finderscope</b>	5x24 Reflex
<b>Telescope Mount</b>	Altazimuth Mount
<b>Tripod Material</b>	Aluminum Alloy
<b>Tripod Height Adjustment</b>	15.7 inches to 49.2 inches
<b>Focus Type</b>	Manual Focus
<b>Compatible Devices</b>	Smartphone (with included adapter)
<b>Product Dimensions</b>	16.9 x 10.8 x 4.3 inches
<b>Item Weight</b>	4.16 pounds

## 9. WARRANTY AND SUPPORT

CELTICBIRD is committed to providing high-quality products and excellent customer service. If you have any questions about your telescope, require assistance with setup, operation, or encounter any issues, please do not hesitate to contact our reliable service team. We aim to respond to all inquiries within 24 hours.

For specific warranty details, please refer to the documentation included with your purchase or contact CELTICBIRD customer support directly.