

eaconn

Astronomical Telescope Astronomisches Teleskop

80AZ 600mm
BLACK / WHITE



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1. Introduction

- Congratulations on your purchase of an EACONN Telescope. This telescope is made of the highest quality materials to ensure stability and durability, all this adds up to a telescope that gives you a lifetime of pleasure with a minimal amount of maintenance.
- This telescope features a compact and portable design with the great optical performance. It is ideal for terrestrial as well as very casual astronomical observation.
- The EACONN Telescope offers a two-year limited warranty. For more details, you can email us via service@eaconn.net.

Product Features

1. Coated glass optical elements for clear, crisp images.
2. Erect image diagonal so that your views are correctly oriented.
3. Smooth functioning altazimuth mount with easy pointing to located objects.
4. Pre-assembled aluminum full-size photographic tripod ensures a stable platform.
5. Quick and easy no-tool setup.
6. The telescope and tripod fit inside the standard backpack for easy traveling.

Kindly Noted

1. Take time to read through this manual before starting your journey through the Universe. It may take a few observing sessions to become familiar with your telescope, so you should keep this manual handy until you have fully mastered your telescope's operation.
2. The manual gives detailed information regarding each step as well as needed reference material and helpful hints to make your observing experience as simple and pleasurable as possible.
3. The telescope is designed to give you years of fun and rewarding observations. Also, there are a few things to consider before using your telescope that will ensure your safety and protect your equipment.

2. Solar Warning

1. Never look directly at the Sun with the naked eye or with a telescope unless you have a solar filter. Permanent and irreversible eye damage may result.
2. Never use an eyepiece solar filter. For internal heat build-up inside the telescope can cause these devices to crack or break, allowing unfiltered sunlight to pass through to the eye.
3. Do not use your telescope to project an image of the Sun onto any surface. Internal heat build-up can damage the telescope and any accessories attached to it.
4. Do not leave the telescope unsupervised, either when children are present or adults unfamiliar with the correct operating procedures of your telescope are present.

3. Telescope Parts List



- | | | |
|---------------------------------------|--------------------|----------------|
| 1. Objective Lens | 5. Eyepiece Holder | 9. Eyepiece |
| 2. Retractable Telescope Optical Tube | 6. Tripod | 10. Focus Knob |
| 3. Tripod Head Platform | 7. Finder scope | 11. Pan Handle |
| 4. Positioning Gimbal | 8. Diagonal | |

Note:

1. Unpack the box carefully as some parts are small.
2. Use the parts list below to verify that all parts and accessories are present.
3. We recommend saving your telescope box so it can be used to store the telescope when it is not in use.

4. Telescope Technical Specifications



- Optical Design: Refractor
Aperture: 80 mm (3.15")
Focal Length: 600mm
Focal Ratio: f/7.5
Optical Coatings: Fully Coated
Finder scope: 5x24
Diagonal: Erect image 45° 1.25"
Eyepieces: 20 mm 1.25" (30x)
Eyepieces: 9 mm 1.25" (67x)
Mount: Altazimuth (Photo Tripod)

5. Assembling Your Telescope

The 80AZ telescope comes in one box. The pieces in the box are telescope optical tube, tripod, diagonal, 20 mm eyepiece, 9 mm eyepiece, 5x24 finderscope with bracket, smartphone adapter all packed in the travel backpack.

(1) Setting up the Tripod

1. To set up the tripod, spread the legs outward gently until they are fully extended and push down on the center leg brace.



2. Ensure to extend the legs of the tripod by unlocking the three tripod lock levers on each leg first. Pull each leg section all the way out and push the lever on each lock downward to

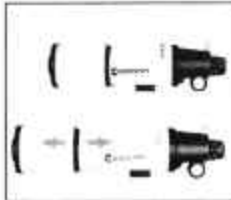


3. Attach the gimbal to the top of the tripod, and tighten the screw to secure the gimbal in the right position. Children need the assistance of adults with the tightening step. For more convenient use, the gimbal cannot be completely locked.



(2) Attaching the Telescope Tube to the Tripod

1. EACONN 80AZ telescope is equipped with a retractable telescope tube, please extend the tube before use.



2. Match the threaded bolt in the mounting platform to the threaded hole on the dovetail of the telescope and tighten it.

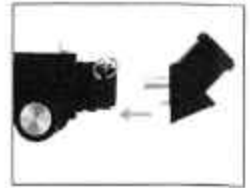


(3) Installing the Diagonal & Eyepiece

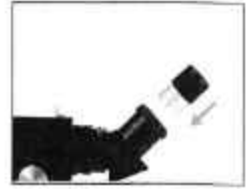
1. Remove the cap from the focuser end of the telescope tube and make sure the two thumbscrews do not protrude into the opening.



2. Locate the erect image diagonal and remove the plastic covers. Insert the barrel of the diagonal into the focuser and secure it in place by tightening the set screws.



3. Insert the barrel of the 20mm eyepiece into the diagonal and tighten the set screw.



(4) Installing the Finderscope

1. Remove the knurled nuts on the threaded posts at the focuser end of the telescope tube.



2. Locate the finderscope and remove the plastic caps on the front and back lens. Orient the finderscope so that the larger lens is facing towards the front of the tube as shown. Place the finderscope over the posts on the tube and replace the knurled nuts to secure it in place.



3. Remove the lens cap from the front of the telescope. To observe, look through the eyepiece as shown. Focus the image by turning the knobs below the focuser.



(5) Using Rough Adjustment and Positioning

EACONN telescope is equipped with a rough adjustment and positioning gimbal with scale, it can help you easy to move wherever you want to point it.

1. The up and down(altitude) is controlled by the Pan Handle.



2. The side-to-side(azimuth) is controlled by the Pan Handle and the screw to fix the gimbal.



(6)Aligning the Finderscope

The finder is one of the most important parts of your telescope. It helps you locate objects and center them in the eyepiece. The first time you assemble your telescope, you need to align the finder to the telescope's main optics. It is best to do this during the day.

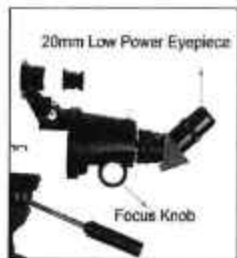
1. Choose a Target ,

Take the telescope outside during the day and find an easily recognizable object, like a street-light, license plate or sign. The object should be as far away as possible, but at least a quarter-mile away.



2. Center the Target in the Eyepiece

Look through the telescope using your low-powered eyepiece. Move the telescope until the object you chose lies in the center of the view. If the image is blurry, gently turn the focus knobs until it comes into sharp focus.



3. Look through Finderscope

Once the object is centered in your 20mm eyepiece, look through the finderscope and locate the crosshair reticle.



4. Adjust the Finderscope

Without moving the telescope, use the three-finger knobs on the finderscope bracket to move the finder around in the bracket until the crosshair appears over the same object you are observing in the telescope's 20mm eyepiece.



Tips: Try adjusting one screw at a time. Loosen one screw by half a turn and tighten another by the same amount to ensure the finderscope is securely held in place.

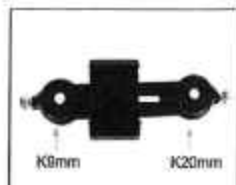
5. Your Finderscope is Now Aligned

It should not require realignment unless it is bumped or dropped.



(7)The Using of Smartphone Adapter

1. We have equipped this telescope with a customized mobile phone adapter. Its two end positions are respectively prepared for K20 and K9 eyepieces, which can quickly and accurately locate the eyepiece and telescope. You only need to select the corresponding eyepiece according to the lettering on the adapter to use.



2. Select K20 for use, pull the clamp to the appropriate width and put the phone into the appropriate position of the phone clip and clamp it.



3. Align the light hole to the main camera and lock the knob.



4. Loose the top screw and insert a K20mm eyepiece, tighten it to secure the eyepiece in place.



5. Insert the phone capture into a prism diagonal. Use the telescope's focuser to adjust the focus of your camera. Snap the image using your phone.



(8) Observing the Moon

The best and easiest target for you to try to view first is the Moon. Try observing the Moon at different points in its phase cycle. The best time to view the Moon is from two days after a New Moon up to a few days before a Full Moon. During this period, you will be able to see the most detail in the craters and lunar mountain ranges.

1. With the Moon visible in the sky, set up your telescope with the 20mm eyepiece installed.



2. Move the telescope so that it is roughly pointing toward the Moon.



3. Look through the finderscope and locate the crosshair reticle. Continue moving the telescope until the crosshair appears over the Moon.



4. Look through the telescope's 20mm eyepiece. Gently turn the focus knobs to adjust the sharpness of the image.

5. To get a closer view of the Moon, loosen the set screws on the focuser and remove the 20mm eyepiece. Replace it with your 9mm eyepiece and tighten the set screws to secure it in place. The 9mm eyepiece will give you significantly more magnification, making the Moon appear much larger.



NOTE:

You may need to adjust the focus knobs when you change eyepieces, so make sure you are getting the sharpest image possible.

6. Theory of the Telescope

(1) About Focusing

To focus your telescope, turn the focus knob located near the rear of the telescope.

1. Turning the knob counterclockwise allows you to focus on an object that is farther than the one you are currently observing.
2. Turning the knob clockwise from you allows you to focus on an object closer than the one you are currently observing.

NOTE:

1. Remove the front lens cap of the telescope optical tube prior to attempting your observation.
2. If you wear corrective lenses or glasses, you may want to remove them when observing with an eyepiece attached to the telescope.
3. If you have astigmatism, corrective lenses should be worn at all times.

(2) About Magnification

You can change the magnification of your telescope just by changing the eyepiece. To determine the magnification of your telescope, simply divide the focal length of the telescope by the focal length of the eyepiece used.

In equation format, the formula looks like this:

$$\text{Magnification} = \frac{\text{Focal length of Telescope (mm)}}{\text{Focal length of Eyepiece (mm)}}$$

1. For example, you are using the 20mm eyepiece that came with your 80AZ telescope. To determine the magnification you divide the focal length of your telescope (the focal length of this telescope is 600mm) by the focal length of the eyepiece, 20mm. Dividing 600 by 20 yields a magnification of 30x.
2. Also, kindly noted that the contrast and brightness will be very low due to the high magnification. You can purchase optional eyepieces to give you a range of powers you can observe with.

(3) General Observing Hints

When using an optical instrument, there are a few things to remember to ensure you get the best possible image.

1. Never look through window glass. Glass found in household windows is optically imperfect, and as a result, may vary in thickness from one part of a window to the next. This inconsistency can and will affect the ability to focus your telescope. In most cases, you will not be able to achieve a truly sharp image, while in some cases you may actually see a blur image.
2. Never look across or over objects that are producing heatwaves. This includes asphalt parking lots on hot summer days or building rooftops.
3. Hazy skies, fog, and mist can also make it difficult to focus when viewing terrestrially. The amount of detail seen under these conditions is greatly reduced.

7. Telescope Care and Cleaning of the Optics

Generally, dust or moisture may build up on the objective lens of your telescope. Special care should be taken when cleaning any instrument so as not to damage the optics.

1. If dust has built upon the optics, it's better to remove it with a brush made of camel's hair, also you can use a commercially made lens cleaner or mix your own. All in all, do NOT scratch the inner circles.
2. Sometimes, you may experience dew build-up on the optics of your telescope during an observing session. If you want to continue observing, the dew must be removed, either with a hairdryer (on low setting) or by pointing the telescope at the ground until the dew has evaporated.
3. If moisture condenses on the inside of the optics, remove the accessories from the telescope. Place the telescope in a dust-free environment and point it down. This will remove the moisture from the telescope tube.
4. To minimize the need to clean your telescope, replace all lens covers once you have finished using it. The covers should be placed over the openings when not in use, this will prevent contaminants from entering the optical tube.
5. Internal adjustments and cleaning should be done only by the repair department. If your telescope is in need of internal cleaning, please call customer service accordingly.

8. 2-Year Limited Warranty

1.30 Day Money Back Guarantee: EACONN shall use reasonable efforts to replace or refund any telescope covered by this warranty within 30 days of receipt, also shall notify the customer accordingly.

2.2Year Warranty: EACONN warrants this telescope to be free from defects in materials and workmanship for two years. We will repair or replace such product or part, of which upon inspection by EACONN, is found to be defective in materials or workmanship.

3. You can contact us via the email: service@eaconn.net to receive a returned address. All returns must be accompanied by a notes that includes the name, address, and daytime telephone number of the owner, together with a brief description of any claimed defects.

4. This warranty shall be void and of no force or effect in the event, a covered product has been modified in design or function or subjected to abuse, misuse, mishandling, or unauthorized repair. Further, product malfunction or deterioration due to normal wear is not covered by this warranty.

5. EACONN expressly disclaims any lost profits, general, special, indirect or consequential damages which may result from breach of any warranty, or arising out of the use or inability to use any EACONN product. Any warranties which are implied and which cannot be disclaimed shall be limited in duration to a term of 2 years from the date of original retail purchase.