Reflector Telescope
3 inch (76) mm Primary Mirror x 700mm Focal Length
MODEL 30-700

Thank you for the purchase of your new Cstar 30-700 Telescope. As with all Cstar Optics products, this product is carefully engineered to give you a high quality optical image and brings you up close to nature, both on the land and in the sky. To get the most performance out of your 30-700, please see the below instructions.

WARNING! Do not, under any circumstance attempt to view the sun through your telescope. Doing so will result in instant and permanent eye damage, as well as serious damage to your telescope.

WARNING: CHOCKING HAZARD-Small parts! Not intended for children under age 6 unless supervised by an adult.

30-700 TELESCOPE SPECIFICATIONS

***TYPE**: REFLECTOR TELESCOPE*
***OBJECTIVE/APERTURE SIZE**: 3-INCH (76MM) PRIMARY MIRROR*
***FOCAL LENGTH**: 700MM*
***USABLE MAGNIFICATION**: H-20 = 35X, SR-6 = 116X*
***MOUNT**: MICRO-ADJUSTABLE ALT-AZIMUTH*
***TRIPOD**: FULL-SIZE ALUMINUM ADJUSTABLE TRIPOD*

EYEPIECE CHART AND THEORETICAL MAGNIFICATION

Eyepiece Type	POWER
1.25" H-20 (20MM)	35X
1.25" H-20 (20MM) WITH 1.5X ERECT IMAGE LENS	52X
1.25" H-20 (20MM) WITH 2X BARLOW LENS	70X
1.25" SR-6 (6MM)	116X
1.25" SR-6 (6MM) WITH 1.5X ERECT IMAGE LENS	174X
1.25" SR-6 (6MM) WITH 2X BARLOW LENS	230X

Telescope Magnification Chart

Model	Focal Length	H20mm (A1)	SR6mm (B1)	1.5x Erecting Lens (D1) + H20mm (A1)	1.5x Erecting Lens (D1) + SR6mm (B1)	2x Barlow Lens (E1) + H20mm (A1)	2x Barlow Lens (E1) + SR6mm (B1)
30-700	700mm	35x	116x	52x	174x	70x	230x

QUICK SET-UP GUIDE FOR YOUR 30-700 TELESCOPE: *See Main Diagram A, Parts Diagram B, and Accessory Diagram C.*

***Never take out the screws that hold the primary mirror into place or take apart your telescope where the primary mirror is located. This will damage your telescope and void all warranties.

****TRIPOD IS ALREADY PREASSEMBLED****

A. EXTENDING AND THE LOCKING TRIPOD LEGS

(See Main Diagram A) Extend one tripod leg **(F)** to desired length, and lock it into place using 1 tripod locking screw **(G)**. Repeat for other two tripod legs.

B. ATTACHING THE MICRO ADJUSTMENT CABLES TO THE ALT-AZIMUTH MOUNT

STEP 1- ***(See Main Diagram A)*** Loosen the **Micro Adjustment Cables (H/I)** thumbscrews.

STEP 2- ***(See Main Diagram A)*** Slide the **Micro Adjustment Cables (H/I)** into the slots located on the **Alt-Azimuth Mount (B)**. Hand tighten the **Micro Adjustment Cables (H/I)** thumbscrews.

C. ATTACHING YOUR TELESCOPE TO THE ALT-AZIMUTH MOUNT

STEP 1- ***(See Main Diagram A)*** Loosen the **Telescope Platform Wing Nuts (O)** located on the **Telescope Platform (M)**.

STEP 2- ***See Main Diagram A)*** Locate the two holes on the top of the **Alt-Azimuth Mount (D)** platform. Line up the **Telescope Platform Locking Screws (N)** on the **Telescope Platform (M)** platform with the two holes on the **Alt-Azimuth (D)** platform.

STEP 3- ***See Main Diagram A, Parts Diagram B, and Accessory Diagram C)*** Hand tighten the **Telescope Platform Wing Nuts (O)** until the **Main Telescope (A)** is firmly in place on the **Alt-Azimuth Mount (D)**.

Make sure to align your finder scope with your telescope!

D. ATTACHING AND ALIGNING YOUR FINDER-SCOPE

Your telescope has two ends. One end is where the primary mirror is located. There are screws that hold the mirror into place. The other end is where the **Objective Cover / Cap (H1)** is located. The **Finder-scope (C1)** should face the end of the telescope where the **Objective Cover / Cap (H1)** is located. When looking through the finder-scope, you should see cross hairs like an "x" and all images will be right side up.

****It is easiest to align your finder-scope during daylight hours.***

*For Aligning your Finder-scope, refer to ***Main Diagram A and Diagram C.***

1) Take out the **Finder-scope Locking Screws (C3).** Line up your **Finder-scope (C1)** with the two holes in the main body of your telescope. Your finder scope should face the end of your telescope where the **Objective Cover / Cap (H1**) is located.

2) Screw the finder scope back in with the **Locking Screws (C3)** by placing them through the finder scope bracket holes and into the two holes in the telescope.
3) Take off the **Objective Cover / Cap (H1).** Insert your **H20mm Eyepiece (A1)** into the **Focuser (B).** Make sure to use the H20 by itself without any accessories.

**It is best to align the Finder-scope when using your low magnification H20 eyepiece.*

4) Aim the open end of the telescope (Where you removed the Objective Cover / Cap) at an object about a quarter mile away from you. Preferably a utility pole or a tower.

5) Slowly move the **Focus Wheel (B)** either towards or away from you until the object is in focus. Make sure to turn the wheel very slowly.

6) Once the object has been centered in the main tube, tighten all the knobs and adjustments to keep the telescope from moving.

7) Look into the **Finder-scope (C1)** and locate the same object as you did with the telescope.

8) If the object is not close to the center of the crosshair, loosen the Finder-scope Adjustment Screws. Re-adjust the finder-scope angle until the object is close to the crosshair intersection and tighten the **Finder-Scope Adjustment Screws (C2).**

**Now the object in the finder scope should also be visible through the telescope. If this is not the case you must repeat steps 4-8 and possibly steps 1-3.*

***Never take out the screws that hold the primary mirror into place or take apart your telescope where the primary mirror is located. This will damage your telescope and void all warranties.

30-700 TELESCOPE ACCESSORIES

A1-H20 EYEPIECE
B1- SR6 EYEPIECE
C1- 5x RIGHT SIDE UP FINDER SCOPE
C2- FINDER-SCOPE ADJUSTMENT SCREWS
C3- LOCKING SCREWS (FINDER SCOPE)
D1- 1.5x ERECTING IMAGE LENS
E1- 2x BARLOW LENS
F1- ACCESSORY TRAY (ATTACHED TO TRIPOD LEGS)
H1- OBJECTIVE COVER (CAP)

30-700 TELESCOPE PARTS

A-MAIN TELESCOPE TUBE
B-FOCUSER/FOCUS WHEEL
C-QUICK RELEASE EYE-PIECE HOLDER
D-ALT-AZIMUTH MOUNT
E-MOUNT LOCKING KNOB
F-TRIPOD LEGS (3)
G-TRIPOD LEG LOCKING SCREWS (3)
H-VERTICAL MICRO ADJUSTMENT CABLE
I-HORIZONTAL MICRO ADJUSTMENT CABLE
J-LARGE SCREWS (3)
K-LARGE WASHERS (6)
L-LARGE WINGNUTS (3)
M-TELESCOPE PLATFORM
N-TELESCOPE PLATFORM LOCKING SCREWS
O-TELESCOPE PLATFORM WINGNUTS

DIAGRAM C - ACCESSORIES

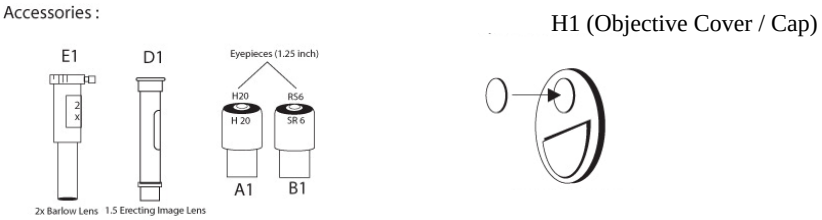


DIAGRAM B - PARTS

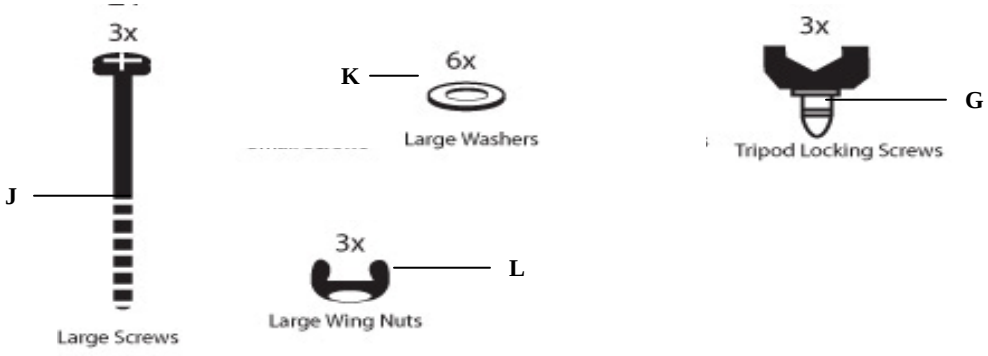
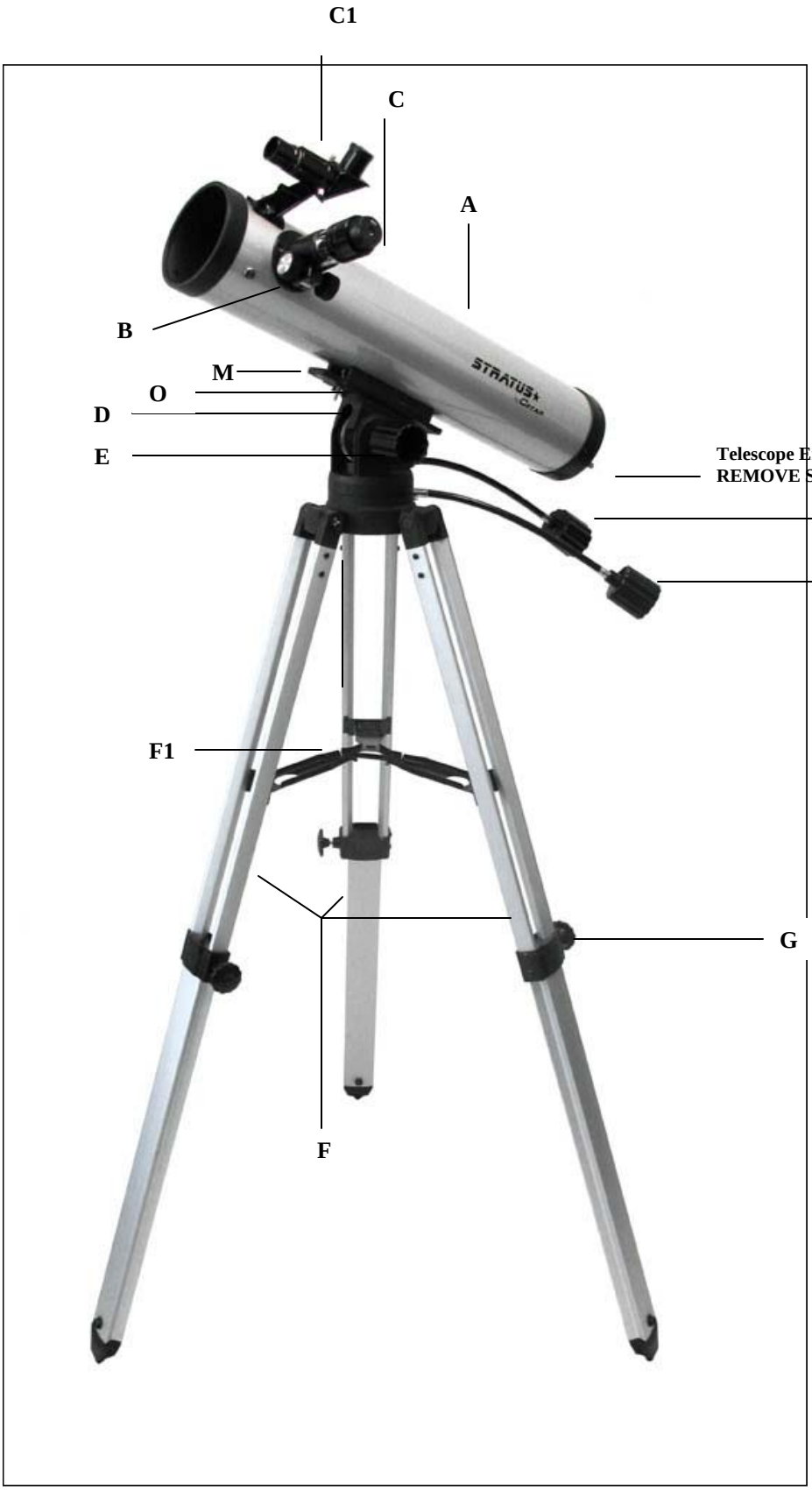


DIAGRAM A - MAIN



HOW TO USE YOUR 30-700 TELESCOPE

SELECTING YOUR EYE-PIECES

Different size Eyepieces are used to change the magnification of your telescope. When just getting started using your telescope, always start out with the Eyepiece that gives you the lowest power. For your 30-700, this will be your **H20 Eye-Piece (A1).**

$$Magnification = \frac{TelescopeFocalLength}{EyepieceFocalLength}$$

Example: When using the H20 Eye-Piece (Focal Length equals 20mm) with your telescope (Telescope Focal length is 700mm), your total magnification would be 35x.

INSERTING ACCESSORIES AND EYEPIECES IN THE QUICK-RELEASE EYEPIECE HOLDER

The **Quick-Release Eye-Piece Holder (C)** allows you to easily insert eyepieces or other accessories into your telescope. Just insert the accessory or eyepiece, and simply twist the quick release eyepiece holder clock-wise. To remove the accessory or eyepiece just turn the quick release eyepiece holder counter-clockwise and remove the accessory or eyepiece.

HOW TO FOCUS YOUR TELESCOPE

Locate the **Focusing Tube/Focus Wheel (B) -** To focus, slowly move the focus wheel either towards or away from you until the object in view becomes clear. Make sure to turn the wheels slowly. It is important to have an eyepiece inserted into the focusing tube in order to view object. It is best to use the H20mm **(A1)**.

USING YOUR TRIPOD

You can adjust your tripod height by loosening the **Tripod Locking Screws (G).** Just extend the legs for added height and re-tighten the Tripod Locking Screws.

USING YOUR MOUNT

To lock or loosen your Yoke Mount in order to move your telescope tube to different positions or to hold the tube still in one position, just loosen or tighten the **ALT-AZIMUTH MOUNT LOCKING KNOB (E)**. In addition, after the telescope is locked in position by tightening the Alt-Azimuth Mount Locking Knob (E), you can still make small "micro" adjustments in Left and Right directions by turning the **MICRO ADJUSTMENT CABLE (I)** clockwise and counter-clockwise. You can also make "micro" adjustments in the Up and Down directions by turning the **MICRO ADJUSTMENT CABLE (H)** clockwise and counter-clockwise. This allows you to track moving objects in the sky.

DAYTIME LAND VIEWING

Start becoming accustomed to using your telescope by practicing in the daytime. It is easier to get a feel for how your telescope works during the daytime.

Each time you put in a new eyepiece (H20mm **(A1)**/SR6mm **(B1)**) or accessory (1.5x Erecting Lens **(D1)**, 2x Barlow Lens **(E1)**) you will need to refocus your telescope.

The 1.5x Erecting Eyepiece **(D1)** will make the image you want to see right side up and inverted. If you do not use this accessory, the object you are looking at will be upside-down and reversed from left to right (This phenomenon is normal for Night Sky viewing and is common in most telescopes).
When looking at the moon or the sky at night you do not need to use your 1.5x Erect Image Lens **(D1).** In space, it does not matter if the image is right side up or not.

For land viewing it is recommended to used the 1.5x Erect Image Lens along with your lowest power H20 eyepiece. As you go higher up in power your field of view will become smaller. If you find you are unable to focus on an object after you have added more power, go back down in power. You may have too much power to see the object you are trying to look at.

NIGHT SKY VIEWING

Locate the celestial object with the help of the finder-scope. Use your 20mm **(A1**) (lower power) eyepiece to view a larger area of the night sky. Once you have focused the desired object (for example: moon), you may choose to replace the eyepiece with the 6mm **(B1)** (high power) to get an even closer view of the celestial body.

There are many wonders to be seen in the Night Sky, such as the Earth's Moon, Planets, Star Clusters, Meteors, and other objects and astronomical events. For a complete list of Night Sky Objects and Events to view, Viewing locations and times, Viewing Tips, or Additional Astronomy Resources, please visit the Cstar Optics, Inc. website at www.cstaroptics.com.

REMINDER: Please keep in mind that your viewing experience greatly depends on atmospheric conditions. Light pollution also plays a big part in whether or not you are able to successfully view desired objects.

USING YOUR ACCESSORIES AND EYE-PIECES

1.5x Erecting Lens (D1) – Place the 1.5x Erecting Lens into the **Quick Release Eye-Piece Housing (C)**. After it is in place, put an eyepiece (H20mm **(A1)**) into the receiving end of the 1.5x Erecting Lens. Keep in mind; it is always best to start with the lower power eyepiece (20mm).

**Remember, the lower the number on the eyepiece, the higher viewing power your telescope will have.*

Barlow Lens (E1) - Place the 2x Barlow Lens into the **Quick Release Eye-Piece Housing (C**). Once the 2x Barlow Lens is in place, put an eyepiece (H20mm **(A1)**) into the receiving end of the 2x Barlow Lens. Keep in mind; it is always best to start with the lower power eyepiece (20mm). Do not use your 1.5x Erect Lens **(D1)** with the Barlow Lens. These accessories are to be used separately from each other.

Right Side Up Finder Scope (C1) - Use your finder-scope to quickly and easily locate the object to be viewed by the higher magnification telescope.

ADDITIONAL VIEWING TIPS

- Try not to touch the eyepiece when looking through your Cstar telescope. Vibrations from such an action will cause the image to move or cause your eyepiece to become unfocused. You should also avoid placing your tripod where it may be subject to movement.

- Before viewing astronomical objects, you should allow your eyes some time to adapt to nighttime viewing. Once your eyes have adapted to the darkness, use a red filtered flashlight to preserve your night vision.

- You should not use your telescope through a window or in a room. Your images may be very blurry and hard to see due to the additional window glass, which causes light to be lost. Allow your telescope at least half an hour to adjust to the outside temperature for optimal performance.

- It is best to start using the lowest magnification (H20 **(A1)**) and to move up in power (6mm **(B1)**). Refocus **(B)** the telescope after changing each eyepiece. As you move up in power your field of view will become smaller. If you find that as you have gone up in power that you cannot focus in on an image, go back down in power. Sometimes you will not be able to see images with too much power. The best viewing for this telescope is between 35x-150x.

- The lens cap **(H1)** has a small cap attached to it. This small cap can be popped out and the larger cap left on. This allows one to view the moon with less light/glare entering the telescope tube.

- **Do not take off the screws on the reflector telescopes at the back. This will damage the primary mirror and void all warranties**.

- Point the open end of the telescope toward the object you are trying to see.

- Light comes in the tube and hits the primary mirror, then bounces light to the secondary mirror, and then the image goes through the eyepiece and to your eye.

WARNING: Never take out the screws that hold the primary mirror into place or take apart your telescope where the primary mirror is located. This will damage your telescope and void all warranties.

HELPFUL Q&A

Q: Why is everything upside down in my telescope?
A: For most astronomical viewing, it does not make a difference if an object is upside down. If you are planning to look at a terrestrial (land) object, use your 1.5x Erecting lens (D1).

Q: Why is the image I see from my telescope different from the photos in books?
A: Most pictures are taken using professional grade equipment or NASA satellites. The atmosphere also has a lot to do with how much and how far you will be able to see. The Earth's atmosphere is constantly in motion, and the continuous movement of its layers affects the images in your telescope. Where you are located has a lot to do with what you can see (due to light pollution and air pollution). Becoming familiar with star charts and becoming more knowledgeable about Astronomy will enable you to more accurately find and track celestial bodies. **To find out more about celestial observation, go to our website and visit our Astronomy center: www.cstaroptics.com**

Q: Why can't I see anything out of my telescope?
A: Check the following to make sure that your telescope is ready for viewing:

*Make sure you have removed the Objective Cover / Cap (H1).
*Try using your telescope with its various eyepieces and accessories during daytime hours. Once you have a feel for how your telescope, eyepieces, and accessories work, then try using the telescope at night.
*Make sure that you have aligned your finder scope with your telescope.
*Make sure you are pointing the open end of the telescope (where the Objective Cover / Cap (H1) is located) at the object you are trying to see.
*Make sure that the screws, which hold the primary mirror into place have not been taken off and that this end of the telescope is still intact.
*Make sure to start with the lowest power (H20mm/A1) eyepiece. Once you have an image in sight, you can then move up in power.
*Make sure to turn the focus wheel (B) slowly. If it is moved too fast the image will come and go out of focus

HELPFUL TELESCOPE TERMINOLOGY

Reflector Telescope (A) - Light reflects off of a primary and secondary mirror that brings images to the eyepiece. There are two ends to a reflector telescope. One end has the primary mirror. The other end has the secondary mirror and Objective Cover / Cap.

Accessory Tray (F1) - The accessory tray is already attached to the three tripod legs (F). It can be used to store eyepieces (A1/B1) and accessories (D1/E1) that are not being used in the telescope.

Eyepiece Provides different viewing powers. Your 30-700 comes with an H20mm **(A1)** and SR6mm **(B1)** eyepiece.

Right Side Up Finder Scope (C1) - Small low power scope with a wider field of view than a telescope. A finder-scope allows the user to quickly and easily locate the object to be viewed by the higher magnification telescope. Most finder-scopes show the image upside down, however, with the 30-700, a right side up finder-scope is provided.

1.5x Erecting Eyepiece (D1) - An auxiliary lens that increases the magnifying power by a specific factor—i.e. 1.5x the original magnification. Makes image right side up and correct from left to right.

Objective Cover / Cap (H1) - Protects your telescope from dust and airborne particles. The objective cover / cap should always be on the telescope when the telescope is not in use. The objective cover / cap has a small cap attached to it. This small cap can be popped out and the larger cap left on. This allows one to view the moon with less light entering the telescope tube. The moon is an exception to the rule that more light is better. The moon is very bright and can sometimes be uncomfortable to view when too much light enters the telescope.

2x Barlow Lens (E1) - An auxiliary lens that increases the magnifying power by a specific factor—i.e. a 2x Barlow lens would triple the magnification of a telescope.

Micro Adjustment Cable (H) - Used to slowly move the telescope in a vertical direction.

Micro Adjustment Cable (I) - Used to slowly move the telescope in a horizontal direction.

Focuser/Focus Wheel (B) - Allows user to focus in and out on an object they are trying to see. Eyepieces **(A1/B1)** and Accessories **(D1/E1/G1)** are inserted into the focuser.

Aperture - The measured diameter of the objective lens.

Ocular - Refers to the Eye-piece lens area

Exit Pupil - Shaft of light emitted from the ocular. This is expressed in millimeters: determined by dividing the size of the objective lens by the power.

Primary Mirror – The main mirror located in the back of the telescope used to gather the light entering the telescope.

Focal Length - The distance, stated millimeters, from the main lens or primary mirror to the focal point - where the light rays converge to form a sharp image. Longer focal lengths give more magnification.

WARNING: ***Never take out the screws that hold the primary mirror into place or take apart your telescope where the primary mirror is located. This will damage your telescope and void all warranties.***

CARE AND MAINTENANCE

Cstar builds its optical products to last for years. IN order to be sure your Telescope is able to perform as it was designed; gently blow away or remove with a small brush any debris or dust that falls on your eyepiece lenses. To clean the eyepiece lenses of fingerprints or dirt, please use a soft non-abrasive cloth and softly rub in a circular motion until the lens is clean. Excessive rubbing, use of a coarse material, or chemical may scratch or remove coating from the lens surface and cause permanent damage. If your image ever seems to not come into focus or if you have trouble seeing the object you are viewing, please contact Cstar Optics for assistance.

WARRANTY AND REPAIR

Cstar Optics, Inc. is dedicated too and confident in the quality and craftsmanship of our products. Cstar Guarantees this telescope to be free from defects in materials and workmanship for the life of the product. The included bonus color digital picture-taking eyepiece is guaranteed for 1 year from the original date of purchase. This warranty is limited to the original purchaser and is non-transferable. In addition, this warranty does not apply to products purchased outside the United States of America. Repaired products will only be shipped back to a United States of America address. The customer is responsible for all freight, duty, and any import costs for any items to ship back from outside of the United States of America.

Should it become necessary to repair or replace your Cstar product, return it prepaid to:

Cstar Optics, Inc.
Attn: Customer Service
15352 S. Keeler St. Unit-E
Olathe, KS 66062

Include a brief note detailing the nature of the defect and a copy of the original sales invoice. A customer service agent will contact you before any parts have been replaced if the nature of the damage is not covered by our warranty. The sole obligation of Cstar Optics, Inc. under the limited warranty is to replace or repair parts on the covered product under the terms set forth.

In addition, this warranty becomes void if the covered product has been modified in design or function, or has been subjected to abuse, mishandling, or unauthorized repair. Furthermore, product malfunction or deterioration due to normal wear is not covered by this warranty.

This warranty gives you specific rights, and you may have other rights, which vary from state to state.

For Customer Service, Please call or email:
Toll Free: 1-877-88-CSTAR
Telephone: 913-829-1004
Fax: 913-829-7466
EMAIL: SERVICE@CSTAROPTICS.COM

Again, we appreciate your business, and hope you have a wonderful experience with your new Cstar Telescope.

Cstar Business Hours: Monday-Friday 8AM-5PM CST

WWW.CSTAROPTICS.COM