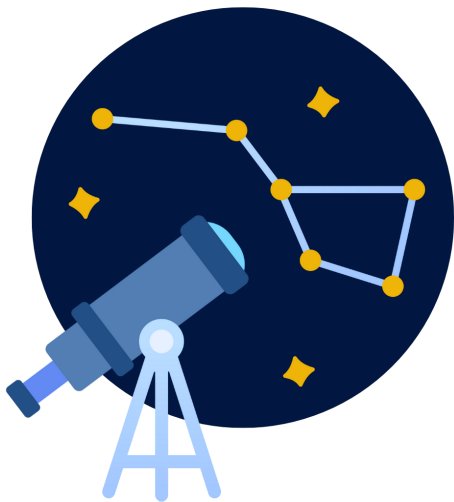
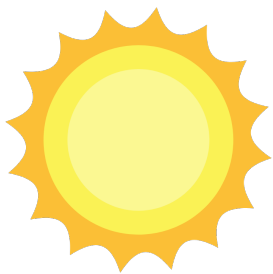


Library Telescope User Guide



CHRISTIAN COUNTY
LIBRARY

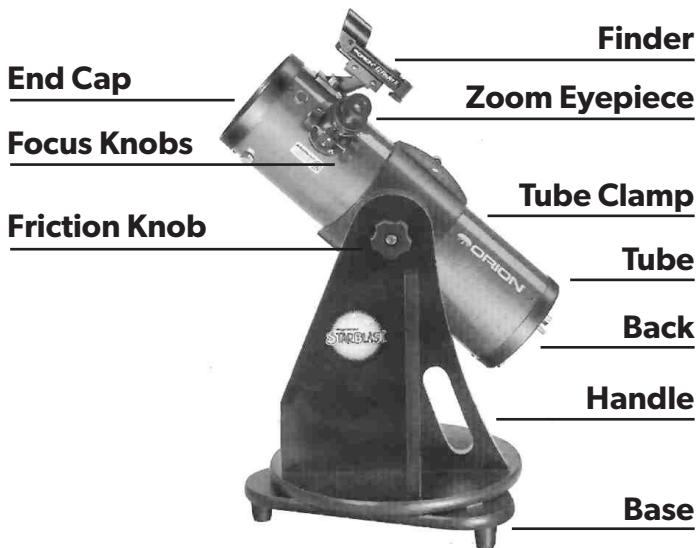


**Never look
directly at the
sun through
your telescope.**

**This will cause permanent
damage to your eye and
parts of the telescope.**

Meet the Telescope

This telescope has a wide field of view, meaning you get to see a large part of the sky. It has a zoom eyepiece, with a range of magnifications from 19 to 56 power. You don't need a great deal of expertise to obtain clear views of the moon, planets and brighter star clusters and nebulae.



Carrying, Transporting and Setup



Carry the telescope using the handle and by holding the base.



Using a seatbelt, strap it into a car seat with the dot stickers facing forward.



When using the telescope, place on a flat and stable surface.



Don't forget the carrying case.

Getting Started

- Place the telescope on a stable, flat surface
- Remove the end cap and the eyepiece cap. Let them hang
- Rotate the tube up and down for vertical pointing of the front of the scope
- Horizontal motion is achieved by swiveling the tube left to right as you grasp it
- Practice moving the tube smoothly **up/down** and **left/right** with hands on each end of the tube
- If needed, adjust the friction knob so the tube will move easily but stays where you leave it

Because the earth is turning, objects in the night sky will look in the telescope like they are moving in the opposite direction.

You will often have to reposition the telescope while using it to keep objects in the center of the eyepiece, so practice moving the telescope tube before taking it out in the dark!

If you find that it's awkward to put your eye up to the eyepiece, you can rotate the telescope tube by loosening the knob on the **tube clamp** and moving the telescope tube until the focuser is in a convenient position. Be sure to tighten it again!



For in-depth
videos on
how to use the
telescope scan
the QR code

What's In the Pack

The waist pack strapped to the telescope mount contains a **user guide**, a **constellation guide**, and a **headlamp**.

Headlamp:

The headlamp has a red and white light setting allowing you to be hands free when reading guides, the constellation guide and making adjustments to the telescope.

When observing at night, it can take up to 20 minutes for your eye to become adapted to the dark. Note: using red light will help when adjusting to the dark.

Other observers will appreciate you using the red light when working with the telescope outside at night.

Constellation guide:

Stargazing is another great thing to do outdoors, with or without your telescope! **Constellations** are groups of stars that form a recognizable pattern. Many of them are named after mythological traditions from all over the world. The included guide has everything you need to start identifying constellations in the night sky.

Choosing Where and When to Observe

When thinking about when and where to observe the night sky, the simple answer is any time the weather permits and right in your backyard or common area.

This telescope can be used to observe the Andromeda Galaxy, the Orion Nebula, the Pleiades Star Cluster and many other interesting star types. Of course the moon is the easiest to find and is full of features - a great starting point!

If you can go somewhere with darker skies, you will have a more successful viewing experience. However, it is important to choose a location that you have permission to be at, such as a public park or property owned by friends or family. Never trespass on property that doesn't belong to you.

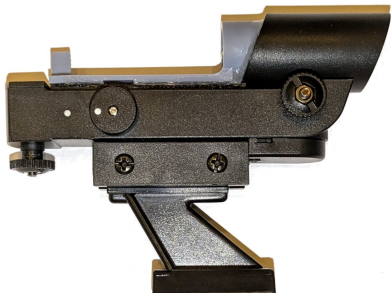
When choosing a location to use a telescope, always remember - **if it doesn't feel right, don't stay.** Your safety is key!



Scan this QR code for list of resources including phone apps, moon maps and passages by the International Space Station.

Aiming the Telescope

Telescopes require a finder to help aim at celestial objects. The eyepiece is not useful for this due to extreme magnification. The original finder has been modified to eliminate the need for a battery.



1. The sight glows in the dark and requires a 4-5 second charge from a white light. To preserve night vision, cup your hand and avert your eyes when charging. You can use the provided headlamp or a small flashlight.

2. Bend and look from behind the finder. Move the tube to align the sight as pictured. This is best done by starting with the target directly above the entire sight and slowly moving the tube upwards until the object is in the circle and centered on the posts.
3. Be sure the eyepiece is on **24mm** or widefield then look in the eyepiece and the object should be visible. If not, try moving the tube slightly while looking in the eyepiece as the target is likely very near. Re-aim if needed. Focus once the object appears in the eyepiece.

Focusing the Telescope

The power of a telescope depends on the **eyepiece** that you use. The eyepiece is where we view the image and the two knobs at its base are for focusing. You may use either or both of these knobs.

Always start by using the telescope's lowest power to locate and center an object.

Eyepiece

Zoom ring

Focus knobs

(Turn the zoom ring so the pointer is at 24mm)



After you have used the red dot sight to aim at your object, slowly rotate the **focus knobs** until the object comes into focus. Rotate the knob a little either side of "focus," just to make sure you've hit the exact focus point.

Increase the magnification by twisting the **zoom ring** towards the **8mm** mark. You may have to refocus after changing the magnification.

EYEPIECE MAGNIFICATION CHART		
TELESCOPE SPECIFICATIONS	F/ 3.9	450MM
EYEPIECE	POWER	FIELD OF VIEW DEG.
8	56x	.55
12	38x	1.23
18	25x	2.05
24	19x	2.46



24mm or 19X
magnification



8mm or 56X
magnification

Remove the 2 inch insert from the larger end cap to view a very bright or full moon through a smaller opening — it's easier on the eyes!

Telescope Tips

Do you wear eyeglasses?

If you are nearsighted or farsighted, you will probably be able to observe with your glasses off. If your eyes are astigmatic, images will probably appear best with glasses on.

Do not attempt to clean the eyepiece lens or the mirror inside the tube.

They have sensitive coatings and should only be cleaned by library staff. Replace the caps hanging from the strings to help with cleanliness.

What if there is dew on the eyepiece?

Please do not wipe the dew away as the lens coatings are easily scratched. Instead, warm the eyepiece by wrapping your hands around it for a few moments and it should dry.

Telescope Tips Continued

Why do I have trouble seeing the image in the eyepiece?

This is usually a problem of distance and position. Explore all of the eyepiece lens even if you have to move your head around. Often the object will pop up all at once. Not seeing can be a problem at first but will get better and the moon is the best practice object.

Acknowledgments

The library would like to thank the Springfield Astronomical Society for their dedication to this program's success. For more information or to get involved with SAS, visit the Springfield Astronomical Society Facebook page or their website at www.springfieldastronomy.org



Telescope basics
YouTube tutorial



Other resources
from the Springfield
Astronomical Society