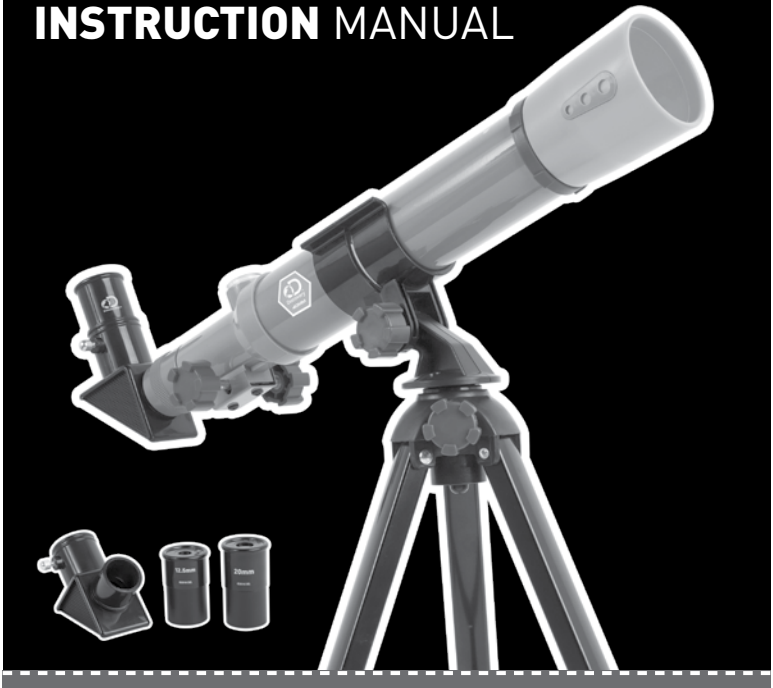
Discovery™

AGES 8+

INSTRUCTION MANUAL



40mm Student Telescope

Space Exploration Gear

⚠ **WARNING:**
SUN HAZARD – Never look directly at the sun with this device.

⚠ **WARNING:**
CHOKING HAZARD – Small parts. Not for children under 3 years.

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Instruction Manual, &
Downloadable Planisphere Visit:

www.exploreone.com/pages/product-manuals

HOW TO SET UP

Introduction:
Begin your adventures in observation with the Discovery 40mm Student Telescope. This easy-to-use refractor is a great starter instrument for both daytime nature watching and nighttime moon gazing. Spend an afternoon visually exploring distant landscape features or getting a closer view of wildlife without disturbing it. Once the stars come out, visit the chiseled ridges and craters of the lunar surface or tour some of the night sky's brightest objects.

For added versatility, the telescope comes with two interchangeable eyepieces, so you can experiment with different magnifications and fields of view.

Assembly:
Note: We recommend assembling your telescope for the first time in the daylight or in a lit room so that you can familiarize yourself with assembly steps and all components.

- Find a stable surface, like a table. Set the tripod on the table and open it until the tripod spreaders are fully extended.
- Snap the telescope tube into the U-shaped clamp on the top of the tripod head.
- Insert the diagonal into the focuser and secure it by tightening the thumbscrews.
- Place your chosen eyepiece into the diagonal. We recommend starting with the 20mm because it will provide the widest field of view.

HOW TO SET UP

1. 40mm Objective Lens
2. Tabletop Tripod
3. Optical Tube Assembly (OTA) with Dew Shield
4. Tripod Head
5. Focus Wheel
6. Diagonal
7. .965" Eyepiece (12.5mm and 20mm)
8. Compass

TELESCOPE TERMS TO KNOW:

Diagonal: A mirror that deflects the ray of light 90 degrees. With a horizontal telescope tube, this device deflects the light upwards so that you can comfortably observe by looking downwards into the eyepiece. The image in a diagonal mirror appears upright, but rotated around its vertical axis (mirror image).

Focal length: Everything that magnifies an object via an optic lens has a certain focal length. The focal length is the length of the path the light travels from the surface of the lens to its focal point. The focal point is also referred to as the focus. In focus, the image is clear. In the case of a telescope, the focal length of the telescope tube and the eyepieces are used to determine magnification.

Lens: The lens turns the light that falls on it around in such a way so that the light gives a clear image in the focal point after it has traveled a certain distance (focal length).

Eyepiece: An eyepiece is a system made for your eye and comprised of one or more lenses. In an eyepiece, the clear image that is generated in the focal point of a lens is captured and magnified still more.

Magnification: The magnification corresponds to the difference between observation with the naked eye and observation through a magnifying device like a telescope. If a telescope configuration has a magnification of 30x, then an object viewed through the telescope will appear 30 times larger than it would with the naked eye. To calculate the magnification of your telescope setup, divide the focal length of the telescope tube by the focal length of the eyepiece.

Did you know?
The magnifying power of a telescope is determined by dividing the focal length of the telescope by the focal length of the eyepiece. This means that as the focal length of your eyepiece increases, the magnifying power decreases.

Using your telescope:
Now you are ready to start observing!
Put the 20mm eyepiece into the diagonal to get the widest field of view. This wider field of view will make it easier to locate and track objects.
To move the scope up, down and side to side, grip the telescope near where the tube meets the focuser and steadily move the tube until your target comes into view in the eyepiece. It is important to remember that the rotation of the Earth means objects will move out of your eyepiece fairly quickly. Once you have found and focused on your desired target, you will have to track the object as it journeys across the night sky.
For a closer look at an object, you can insert the 12.5mm eyepiece. The magnification will increase from 20x to 32x.

Cleaning:
Your telescope is a precision optical device and keeping the optics free of dust and dirt is crucial for optimal performance. To clean the lenses (objective and eyepiece) use only a photo-grade soft brush or a lint-free cloth, like a microfiber cloth. Do not press down too hard while cleaning, as this might scratch the lens. Ask your parents to help if your telescope is really dirty. If necessary, the cleaning cloth can be moistened with an optical glass cleaning fluid and the lens wiped clean using very little pressure. Do not use harsh detergents!

Make sure your telescope is always protected against dust and dirt.
After use, leave it in a warm room to dry off before storing.

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Terrestrial Images

f=20 mm f=12.5 mm

The Moon

f=20 mm f=12.5 mm

Troubleshooting Guide:

No picture	Remove dust protection cap and sun-shield from the objective opening.
Blurred picture	Adjust focus using focus ring.
No focus possible	Wait for temperature to balance out.
Bad quality	Never observe through a glass surface such as a window.
Viewing object visible in the finder, but not through the telescope	Align finder to telescope (see instructions)
Despite using star diagonal prism the picture is "crooked"	The star diagonal prism should be vertical in the eyepiece connection.

SAFETY WARNINGS

Read and follow the instructions, safety rules, and first aid information.

- Respect privacy: When using this device, respect the privacy of other people. For example, do not use them to look into people's homes.
- Choking hazard: Children should only use device under adult supervision. Keep packaging materials like plastic bags and rubber bands out of the reach of children as these materials pose a choking hazard.
- Risk of blindness: Never use this device to look directly at the Sun or in the direct proximity of the Sun. Doing so may result in a permanent loss of vision.
- Risk of fire: Do not place device, particularly the lenses, in direct sunlight. The concentration of light rays could cause a fire.
- Do not disassemble this device. In the event of a defect, please contact your dealer. The dealer will contact the Customer Service Department and can send the device in to be repaired if necessary.
- Do not subject the device to temperatures exceeding 60° C (140° F).

- Disposal: Keep packaging materials, like plastic bags and rubber bands, away from children as they a pose a risk of suffocation. Dispose of packaging materials as legally required. Consult the local authority on the matter if necessary and recycle materials when possible.

Discovery™

CONFORMS TO THE SAFETY REQUIREMENTS OF ASTM F963