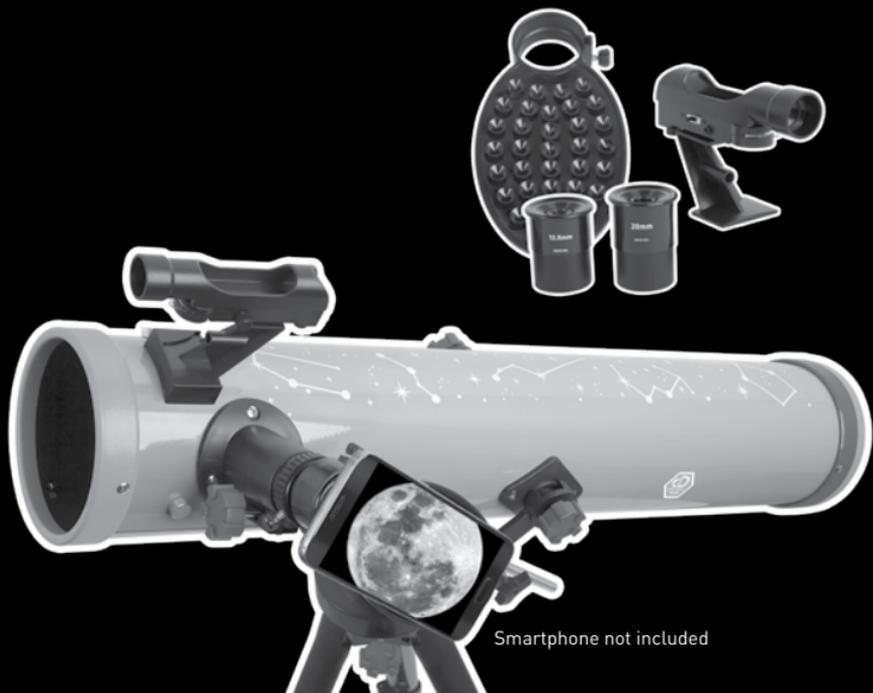


 **Discovery™**

AGES
10+

INSTRUCTION MANUAL



Smartphone not included

76mm Starcapture Telescope

Space Exploration Gear



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

WARNING:
Contains button or coin cell battery.
Hazardous if swallowed - see instructions.



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

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WARNING

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**Instruction Manual, &
Downloadable Planisphere Visit:**

www.exploreone.com/pages/product-manuals



HOW TO SET UP

Welcome to the world of amateur astronomy!

With the Discovery 76mm Starcapture Telescope, you can expand your knowledge of all things celestial and practice basic astrophotography. Take a tour of deep sky and visit its brightest star clusters, nebulae and galaxies or get detailed views of the moon and planets with this reflector's light-gobbling 76mm aperture. Capture and share images of your favorite objects, by using the photo imaging adapter to stabilize the camera of your smart device over the eyepiece. For added versatility, this telescope, which has a 700mm focal length, comes with two eyepieces to provide magnifications of 35x and 56x.

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.

- Open the tripod until the tripod spreaders are level. Put the accessory tray in place and turn it to lock it into place. Set the tripod height by adjusting each leg with its locking clamp.
- Insert the yoke mounting arm from above into the opening in the tripod head and secure it in place by tightening the screw.
- Attach the altitude adjustment rod to the telescope tube.
- There are two plates on either side of the telescope tube. To attach the telescope tube to the yoke mount position the tube so these plates slide into the slots on both sides of the yoke mount and tighten the locking screws until snug. Be careful not to overtighten.
- Attach the locking screw for the altitude adjustment rod to the tripod head yoke.
- Slide the red dot viewfinder into the finder bracket that is already mounted on the telescope tube.
- Place your chosen eyepiece into the focuser and secure it by tightening the setscrew. Be careful not to overtighten.

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INSTRUCTION MANUAL

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.

Using/Aligning the Red Dot Viewfinder:

The viewfinder is powered by a battery type CR-2032 (3V) that is included. Before using the viewfinder for the first time, remember to remove the plastic insulator that is blocking the battery from connecting. When it is time to replace the battery, remove the battery cap by loosening the set screw. Take out the old battery and slide a new battery in place with the positive side showing. Replace the cap, and tighten the set screw.

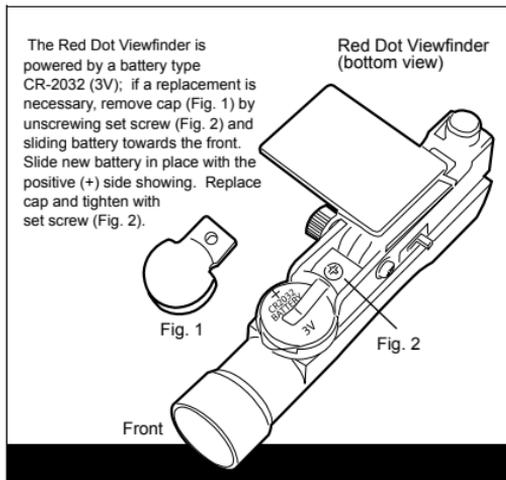
For the viewfinder to be effective, it must be aligned. To do this:

- Insert the 20mm eyepiece into the diagonal and power on the viewfinder by sliding the switch on its right side to an "On" position.
- Point the eyepiece at an easy target like a telephone pole and center the object in the eyepiece.
- Without moving the telescope, position the red dot using the two adjustment screws so that it shares the same view as the one in your eyepiece. Your viewfinder is now aligned.

Note: To preserve battery life, don't forget to turn off the viewfinder after use.

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:

After you have aligned your viewfinder, 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 your telescope up and down, use the altitude adjustment rod. To move your telescope from side to side, use the azimuth wheel on the mount head. To move your telescope to an observing target or make coarse adjustments, loosen the locking screws on both controls while holding the telescope firmly near the focuser. Slowly move the telescope to the position of the desired object, then tighten the controls until snug. Do not overtighten. Center the object in the viewfinder by making slight movements to both the altitude adjustment rod and the side azimuth wheel. Once centered, you should be able to view the object through the eyepiece and continue to make minor adjustments using the altitude adjustment rod and azimuth wheel. 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 can track it as it journeys across the night sky using the slow motion control on the mount head. For a closer look at an object, you can insert the 12.5mm eyepiece. The magnification will increase from 35x to 56x.

Using the Photo Imaging Adapter

The Photo Imaging Adapter will allow you to connect almost any “smart” device to this telescope.

To use the adapter, place it directly onto the selected eyepiece and secure it by tightening the setscrew until snug. Be careful not to overtighten because this could damage the adapter and/or the eyepiece.



The camera lens on your smart device will need to be centered over the eyepiece. This alignment is best done by opening the camera function and viewing the image while you center the device. Once you have positioned the device correctly, carefully press it onto the suction cup/non-skid surface of the adapter pad. Never allow the adapter pad to hold your device without you supporting the item as well.

The point at which you secure the eyepiece/adapter combination into the diagonal depends largely on the dimensions of your device. For smaller devices like smart phones, it may be easier to secure it to the eyepiece/adapter combination before inserting the entire unit into the diagonal on the telescope. For larger devices, such as tablets, it may be easier to secure the eyepiece/adapter combination into the diagonal, and then align and attach your device.

WARNING: Do not leave your device unsupported or unattended on the adapter pad.

Though the surface of the adapter pad is designed with suction cups and is non-skid, the manufacturer cannot assure that the pad will support the weight of various devices or guarantee that it will adhere to all surfaces on various smart devices. The pad is not intended to secure, balance or support the device on its own, and the operator should not let the device rest solely on the adapter pad. Leaving the device unattended or allowing it to balance on its own without operator support may result in the device falling, unbalancing the entire instrument and possibly damaging the telescope or your smart device.

POSSIBLE OBJECTS FOR OBSERVATION:

Terrestrial objects

Take note of the examples below, including Mount Rushmore and the golf course. Start with the 20 mm eyepiece and focus until the image is clear. After mastering the 20 mm eyepiece, switch to the 12.5 mm eyepiece and practice scanning and focusing until the image is clear. Choose several terrestrial objects to practice focusing on, but never point your telescope at or near the sun, or you risk blindness.

The Moon:

Diameter: 3,476 km

Distance: Approximately 384,401 km

The Moon is the Earth's only natural satellite, and it is the second brightest object in the sky (after the Sun). Although it is our closest neighbor, a lot of people have never really taken a good long look at the Moon. With your telescope, you should be able to see several interesting lunar features. These include lunar maria, which appear as vast plains, and some of the larger craters. The best views will be found along the terminator, which is the edge where the visible and cloaked portions of the Moon meet.

Terrestrial Images

f=20 mm

f=12.5 mm



The Moon

f=20 mm

f=12.5 mm



Orion Nebula:

Right ascension: 05: 35.4 (hours: minutes)

Declination: -05: 27 (degrees: minutes)

Distance: Approximately 1,344 light years

The Orion Nebula is a vast star-forming region located in the “sword” branching off of the famous Orion’s Belt. Also known as Messier 42, this diffuse nebula is bright enough to see with the unaided eye — although it will only appear as a slightly foggy star. However, with your telescope, you can see many of the beautiful details, such as the billowing clouds of gas and dust where new stars are being born.

Pleiades Star Cluster:

Right ascension: 03: 47.0 (hours: minutes)

Declination: +24: 07 (degrees: minutes)

Distance: Approximately 444 light years

The Pleiades Star Cluster is a group of brilliant blue stars located in the Taurus Constellation. Also known as Messier 45 or “Seven Sisters”, this open star cluster consists of more than 1,000 confirmed stars, although an average of only six are visible to the unaided eye. With your telescope, you can quickly reveal some of the more elusive members of this legendary and beautiful cluster.

Andromeda Galaxy:

Right ascension: 00: 42.7 (hours: minutes)

Declination: +41: 16 (degrees: minutes)

Distance: Approximately 2.54 million light years

The Andromeda Galaxy is the closest major galaxy to our own Milky Way. Also known as Messier 31, this famous spiral galaxy is part of the Local Group of galaxies. Although it is technically bright enough to see with the unaided eye under a very dark sky, your telescope may show its bright center, hints of its spiral structure and its much smaller companion galaxies known as M32 and M110.

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.

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.
- **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.
- **Battery guidelines:** The red dot viewfinder contains electronic components that

are powered by batteries. Batteries should be kept out of children's reach. When inserting batteries, please ensure the polarity is correct. Insert the batteries according to the displayed +/- information. Never mix old and new batteries. Replace all batteries at the same time. Never mix alkaline, standard carbon-zinc and rechargeable nickel-cadmium batteries. Never short circuit the device or batteries or throw either into a fire. Leaking or damaged batteries can cause injury if they come into contact with the skin. If you need to handle such batteries, please wear suitable safety gloves. Remove batteries from the product before extended storage to prevent leaking. Do not immerse the battery compartment in water.



WARNING: This product contains a Button or Coin Cell Battery. A swallowed Button or

Coin Cell Battery can cause internal chemical burns in as little as two hours and lead to death. Dispose of used batteries immediately. Keep new and used batteries away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

- 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 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.



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