English

#5F5F60D

ASTRO NOVA HD TELESCOPE

T1000HD

⚠ WARNING: Do not look directly at the sun.

For additional help, please call: 1-855-863-4426

CAUTION:
Never attempt observing the sun with this telescope! Especially keep it in mind while the telescope is used by children! Observing the sun – even for a very short time – will cause blindness!
Keep packaging materials (plastic bags, etc.) out of reach of children!

RISK to your child!

Never look through this device directly at or near the sun. There is a risk of **BLINDING YOURSELF!**

Children should only use this device under adult supervision. Keep packaging materials (plastic bags, etc.) away from children. There is a risk of **SUFFOCATION!**

Fire/Burning RISK!

Never subject the device - especially the lenses - to direct sunlight. Light ray concentration can cause fires and/or burns.

RISK of material damage!

Never take the device apart. Please consult your Customer Service if there are any defects. The dealer will contact our service center and send the device in for repair if needed.

Do not subject the device to temperatures exceeding 140°F.

TIPS on cleaning

Clean the lens (objective and eyepiece) only with a soft lint-free cloth (e.g. micro-fibre). Do not use excessive pressure - this may scratch the lens.

Dampen the cleaning cloth with a spectacle cleaning fluid and use it on very dirty lenses.

Protect the device against dirt and dust. Leave it to dry properly after use at room temperature. Then put the dust caps on and store the device in the packaging provided.

RESPECT Privacy!

This device is meant for private use. Respect others' privacy – do not use the device to look into other people's homes, for example.

DISPOSAL

Dispose of the packaging materials as legally required. Consult the local authority on the matter if necessary.

Fig 6

Warning:

Never use a telescope to look at the sun! Looking at or near the sun will cause instant and irreversible damage to your eye. Eye damage is often painless, so there is no warning to the observer that damage has occurred until it is too late. Do not point the telescope or its viewfinder at or near the sun. Do not look through the telescope or its viewfinder as it is moving. Children should always have adult supervision while observing.

Your telescope has the following parts

1 Telescope tube
2 Red Dot Finder
3 Adjusting screws for finder
4 Tube opening
5 Focuser
6 Rear of Telescope
7 Flexible Shaft (Altitude Up and Down)
8 Flexible Shaft (Azimuth Left and Right)
9 Tripod head
10 26mm Plossl and 12.5mm Huygens Eyepieces
11 Locking clips (on tripod)
12 Tripod and Accessory Tray

Set-up

1. General Information regarding Assembly, Positioning

Before beginning with the assembly, choose a suitable position for your telescope. It will help if you assemble this apparatus at a spot from where you have a clear view of the sky, a sturdy surface beneath you, and enough space.

Important: Tighten screws only as much as you can by hand - do not "over-tighten" the screws.

2. Tripod

Take the three-legged tripod and set it vertically on the floor with the feet pointing downwards. Now take two of the tripod legs and pull these legs carefully out away from each other, until they have reached their fully opened position. During this time, the entire weight of the tripod rests on one leg. Finally, set the tripod down on all legs, so that it stands straight. Loosen the three locking clips on the tripod legs, pull each individual tripod leg out until it has reached the desired length close up the locking clips and set the tripod down on a sturdy, even surface.

TIP:
A small water level on the accessory tray can help you position your tripod horizontally.

3. Mounting the tray:

The accessory tray must be positioned with its flat side down in the middle of the tripod leg brace, and then must be mounted by turning it 60° in a clockwise direction.

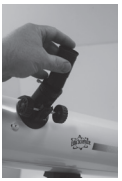
The three projections on the tray plate must match up to the mounting brackets on the division bars (and must snap into place. If necessary, you may push the tripod leg brace downwards a little.

Now set the tube (and holder) onto the mount with the objective opening in the direction marked (N-marking on the tripod head, north point and telescope figure on the mount). Then fasten the tube holder with the clamping screw of the dovetail adapter on the mount head.

4. Inserting the Eyepiece

2 eyepieces: 26mm and 12.5mm come with your telescope. With the eyepieces, you can control the magnification of your telescope.

Before installing the eyepieces and the focuser, take the lens cap out of the eyepiece holder.



NOTE: Make sure the focuser is closest to the object which you are trying to view. If the focuser is not closest to the object the telescope is facing backwards and the view will not be of the ground and dark or black.

5. Aligning the Red Dot Finderscope

Your telescope is designed for terrestrial and astronomical observations. Please keep in mind that heat turbulences in the air are also magnified. In warm conditions, it can be useful to limit observations to medium magnifications.

First, remove the dust cover from the objective lens.

Please make sure to remove plastic insulator from battery Fig 1.

Insert the 26 mm Eyepiece into the diagonal, you may now adjust the focus with the draw tube's wheel. The Red Dot Finderscope is activated by sliding the switch on its right side; there are two intensities available. Before the first observation, the Red Dot Finderscope has to be aligned to the telescope. For this, point at a striking target (e.g. telephone pole) with the telescope's eyepiece. Now, without moving the telescope, switch on the Red Dot Finderscope and adjust the red dot with the 2 adjustment screws (left and right - up and down) until it fits to the eyepiece's view. Now the Red Dot Finderscope is aligned and ready to point for the telescope.

Hint:
Don't forget to switch it off after use!

6. Flexible shafts

In order to facilitate the exact fine adjustment of the declination and right ascension shafts, the flexible shafts have been placed on the holders of both these shafts, in the places designed for that purpose.

The long flexible shaft is mounted parallel to the telescope tube. It is secured with a clamp screw on the designated indentation on the shaft.

The short flexible shaft is mounted sideways. It is secured with a clamp screw on the designated indentation on the shaft. Your telescope is now ready for use.

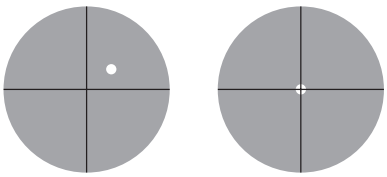
Using the Telescope

Observation

After you have located the North Star in the finder, you will be able to recognize the North Star when you look through the eyepiece of the telescope. If needed, you can angle the telescope even more exactly toward the star (with the help of the flexible shafts), or you can adjust the focus with the focus knob.

Additionally, you can now switch to a higher magnification by changing the eyepiece (to a smaller focal length). Please be aware that the magnification of the stars is barely perceptible.

TIP: Eyepieces are lens systems designed for your eye. In an eyepiece, the clear image that is generated in the focal point of a lens is captured (in other words, made visible) and magnified still more. Eyepieces with various focal lengths are necessary in order to achieve various degrees of magnification. Begin each observation with an eyepiece with a low magnification (large focal length, e.g. 26 mm).

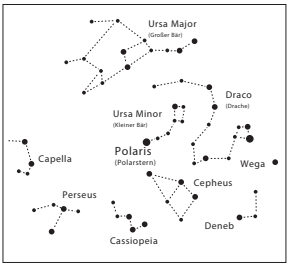


Finding stars

In the beginning, you will certainly find it difficult to orient yourself in the sky, since stars and constellations are always moving, and their position in the sky varies according to the season, date, and time. The North Star is an exception to this. If you were to imagine the polar axis of the Earth extending out into space, it would approximately hit the North Star. The so-called north celestial pole is the starting point for all star charts.

On the drawing you see a number of the more familiar constellations and star clusters, which are visible throughout the year. The position of the stars is, of course, dependent on date and time.

If you have fixed your telescope on one of these stars, you will notice that within a short time it disappears from the eyepiece field of vision. In order to compensate for this effect, operate the flexible shaft of the counterweight axis, and your telescope will follow the apparent path of this star.



Storing the Telescope

Hopefully your observation session will have been interesting and successful; afterwards, it is recommended to store the telescope in a dry and well-ventilated room. Please do not forget to place the lens caps back onto the front tube opening and the eyepiece holder. All eyepieces and optical accessories should also be stored in their respective containers.

NOTE: Make sure the focuser is closest to the object which you are trying to view. If the focuser is not closest to the object the telescope is facing backwards and the view will not be of the ground and dark or black.

Possible objects for observation:

We have compiled and explained a number of very interesting celestial bodies and star clusters for you but we suggest that you start practicing during the day focusing on terrestrial objects such as Birds and or Trees at varying distances from you. **This is just for practice, the T1000HD telescope is not designed for terrestrial viewing - NOTE Images will be upside down and backwards.** On the accompanying images at the end of the instruction manual, you can see how objects will appear in good viewing conditions through your telescope at varying powers (see pictoral examples on the following page).

Terrestrial Views

Please note the example picture of Mount Rushmore. Start with the 26mm eyepiece and focus until clear. After mastering the focus with the 26mm change the 12.5mm eyepiece and practice focusing and scanning until images become clear in the eyepiece. We have included some additional examples that are possible with your telescope such as a bird and a green on a golf course. **DO NOT POINT YOUR TELESCOPE DIRECTLY AT THE SUN OR BLINDNESS IS POSSIBLE.**

The Moon

The moon is the Earth's only natural satellite.
Diameter: 3.476 km
Distance: approx. 384 401 km

The moon has been known to humans since prehistoric times. It is the second brightest object in the sky (after the sun). Because the moon circles the Earth once per month, the angle between the Earth, the moon and the sun is constantly changing; one sees this change in the phases of the moon. The time between two consecutive new moon phases is about 29.5 days (709 hours).

Orion Nebula (M 42)

M 42 in the Orion constellation

Right ascension:	05:32.9 (Hours: Minutes)
Declination:	-05º 25´ (Degrees: Minutes)
Distance:	1.500 light years

With a distance of about 1.500 light years, the Orion Nebula (Messier 42, abbreviation: M 42) is the brightest diffuse nebula in the sky – visible with the naked eye, and a rewarding object for telescopes in all sizes, from the smallest field glass to the largest earthbound observatories and the Hubble Space Telescope. When talking about Orion, we're actually referring to the main part of a much larger cloud of hydrogen gas and dust, which spreads out with over 10 degrees over the half of the Orion constellation. The expanse of this enormous cloud stretches several hundred light years.

Ring Nebula in Lyra constellation (M 57)

M 57 in the Lyra constellation

Right ascension:	18:53 (Hours: Minutes)
Declination:	+33º 01´ (Degrees: Minutes)
Distance:	2.3 light years

The famous Ring Nebula M 57 in the constellation of Lyra is often viewed as the prototype of a planetary nebula; it is one of the magnificent features of the Northern Hemisphere's summer sky. Recent studies have shown that it is probably comprised of a ring (torus) of brightly shining material that surrounds the central star (only visible with larger telescopes), and not of a gas structure in the form of a sphere or an ellipsis. If you were to look at the Ring Nebula from the side, it would look like the Dumbbell Nebula (M 27). With this object, we're looking directly at the pole of the nebula.

Dumbbell Nebula in the Vulpecula (Fox) constellation (M 27)

M 27 in the Fox constellation

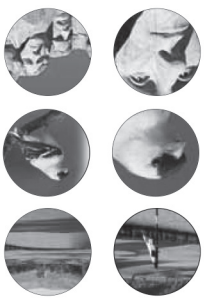
Right ascension:	19:59.6 (Hours: Minutes)
Declination:	+22º 43´ (Degrees: Minutes)
Distance:	1.360 light years

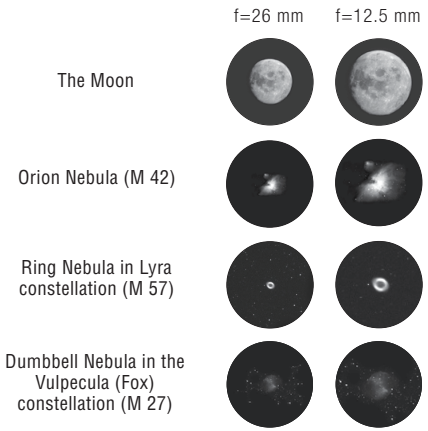
The Dumbbell Nebula (M 27) in Fox was the first planetary nebula ever discovered. On July 12, 1764, Charles Messier discovered this new and fascinating class of objects. We see this object almost directly from its equatorial plane. If you could see the Dumbbell Nebula from one of the poles, it would probably reveal the shape of a ring, and we would see something very similar to what we know from the Ring Nebula (M 57). In reasonably good weather, we can see this object well even with small magnifications.

NOTE : The T1000HD Telescope is not designed for Terrestrial Viewing - Images will be upside down and backwards.

Terrestrial Images

f=26 mm f=12.5 mm





Telescope ABC's

What do the following terms mean?

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 (FL). The FL 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 FL of the telescope tube and the eyepieces are combined.

Lens:

The lens turns the light which 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.

There is a simple formula for calculating the magnification: Focal length of the telescope tube / Focal length of the eyepiece = Magnification

You see: In a telescope, the magnification depends on both the focal length of the telescope tube and the focal length of the eyepiece.

Magnification:

The magnification corresponds to the difference between observation with the naked eye and observation through a magnification apparatus (e.g. a telescope). In this scheme, observation with the eye is considered "single", or 1x magnification. Accordingly, if a telescope has a magnification of 30x, then an object viewed through the telescope will appear 30 times larger than it would with the naked eye. See also "Eyepiece."

Troubleshooting:

Mistakes:	**Help:**
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 picture	Never observe through a glass surface
Viewing object visible in the finder, but not through the telescope	Adjust finder

DISPOSAL
Dispose of the packaging materials properly, according to their type (paper, cardboard, etc).
Contact your local waste disposal service or environmental authority for information on the proper disposal.

Please take the current legal regulations into account when disposing of your device. You can get more information on the proper disposal from your local waste disposal service or environmental authority.

Warning- The lens contains lead that may be harmful. Wash hands after touching.

Product Manual, Planisphere & Astro Software Visit:

www.exploreone.com/pages/product-manuals

Part of the "R"US Family of Brands.
Fait partie de la famille des marques "R"US.
Forma parte de la marce de familia "R"US.
Parte della "R"US Famiglia di Marchi.
Ein Teil der "R" US Familie von Marken.
Czesc "R" US rodzinie marek.
Parte da família "R" US de Marcas.
Een deel van de "R" US Familie van merken.

Contents and colors may vary.
Le contenu et les couleurs peuvent varier.
El contenido y los colores pueden variar.
Contenuti e colori possono variare.
Inhalte und Farben können variieren.
Zawartosc i kolory moga sie róznic.
Conteúdo e cores podem variar.
Inhoud en kleuren kunnen variëren.

Do not mix old and new batteries. Do not mix alkaline, standard (carbon-zinc), or rechargeable batteries.

Ne mélangez pas les piles neuves et usées. Ne pas mélanger des piles alcalines, standard (au carbone-zinc) piles ou rechargeables.

No mezcle pilas nuevas con pilas usadas. No mezcle pilas alcalinas, estándar (carbone-zinc) ni recargables.

Non mischiare batterie vecchie e nuove. Non mischiare batterie alcaline, standard (carbonio-zinco), o ricaricabili.

Verwenden Sie nicht gleichzeitig alte und neue Batterien. Mischen Sie keine alkalischen, Standard- (Carbonzink) oder Akkus.

Nie mieszaj starych i nowych baterii. Nie nalezy mieszac baterii alkalicznych, standardowych (cynkowo-weglowych) lub akumulatorków.

Não misture pilhas velhas e novas. Não misture pilhas alcalinas, padrão (carbono-zinco), ou pilhas recarregáveis.

Gebruik geen oude en nieuwe batterijen door elkaar. Gebruik geen alkaline, standaard (koolstof-zink), of oplaadbare batterijen.

MADE IN CHINA (FABRIQUÉ EN CHINE/FABRICADO EN CHINA)
DISTRIBUTED IN THE UNITED STATES BY (DISTRIBUÉ AUX ÉTATS-UNIS PAR/DISTRIBUIDO EN LOS ESTADOS UNIDOS POR) TOYS"R"US, INC., WAYNE, NJ 07470
IMPORTED BY (IMPORTÉ PAR/IMPORTADO POR)
TOYS"R"US (CANADA) LTD. (LTÉE),
2777 LANGSTAFF ROAD, CONCORD, ON L4K 4M5
DISTRIBUTED IN AUSTRALIA BY (DISTRIBUÉ EN AUSTRALIE PAR/DISTRIBUIDO EN AUSTRALIA POR) TOYS"R"US (AUSTRALIA (AUSTRALIE)) PTY LTD.(LTÉE), REGENTS PARK NSW 2143

www.toysrus.com www.toysrus.ca

#5F5F60D