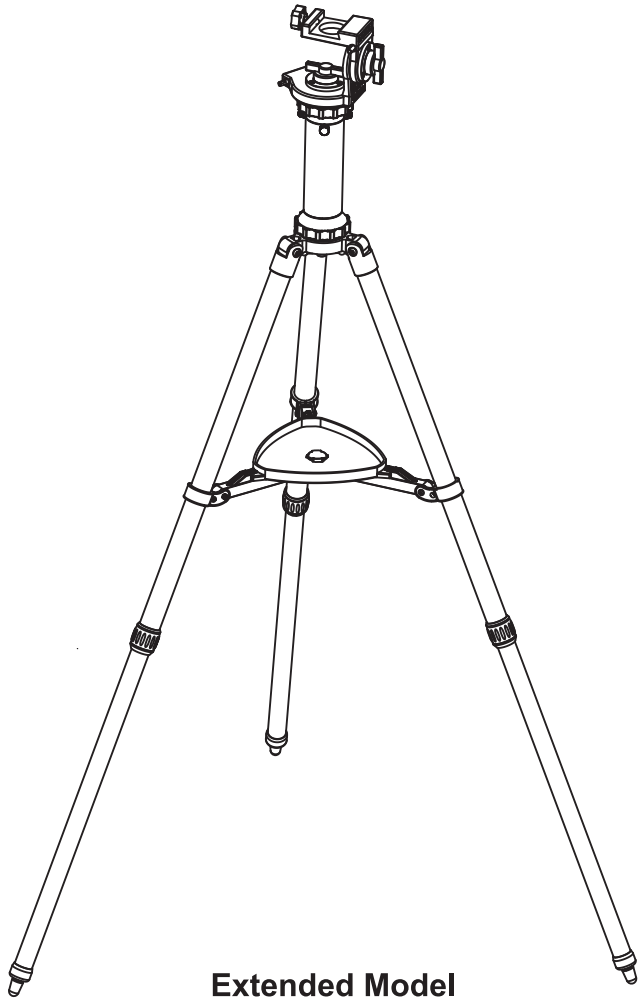
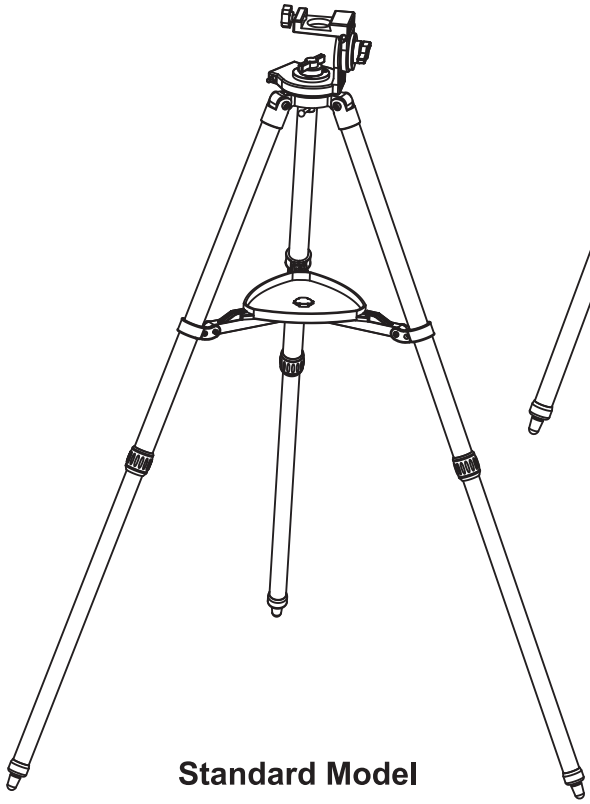
INSTRUCTION MANUAL

AZ PRONTO Mount



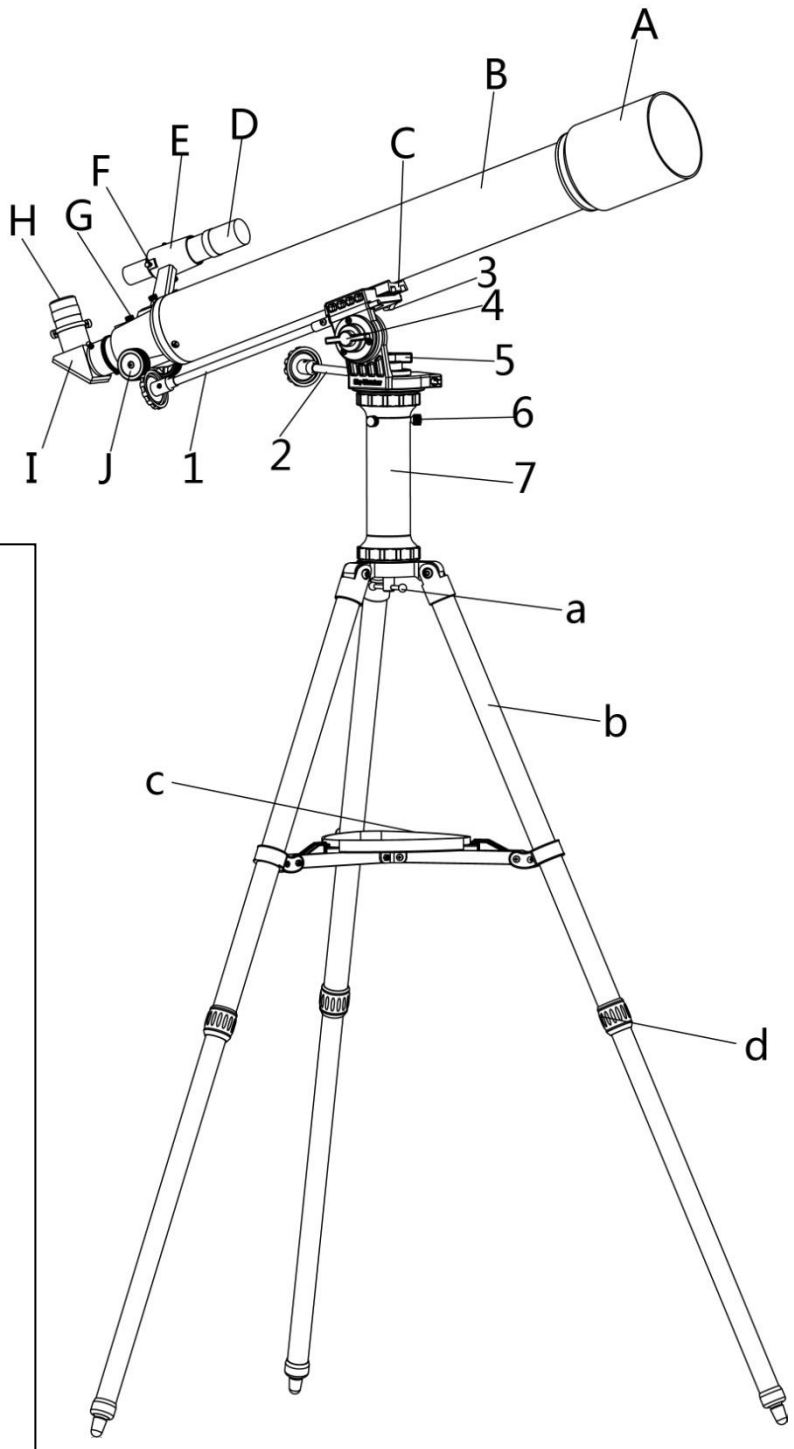
Extended Model



Standard Model

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REFRACTOR

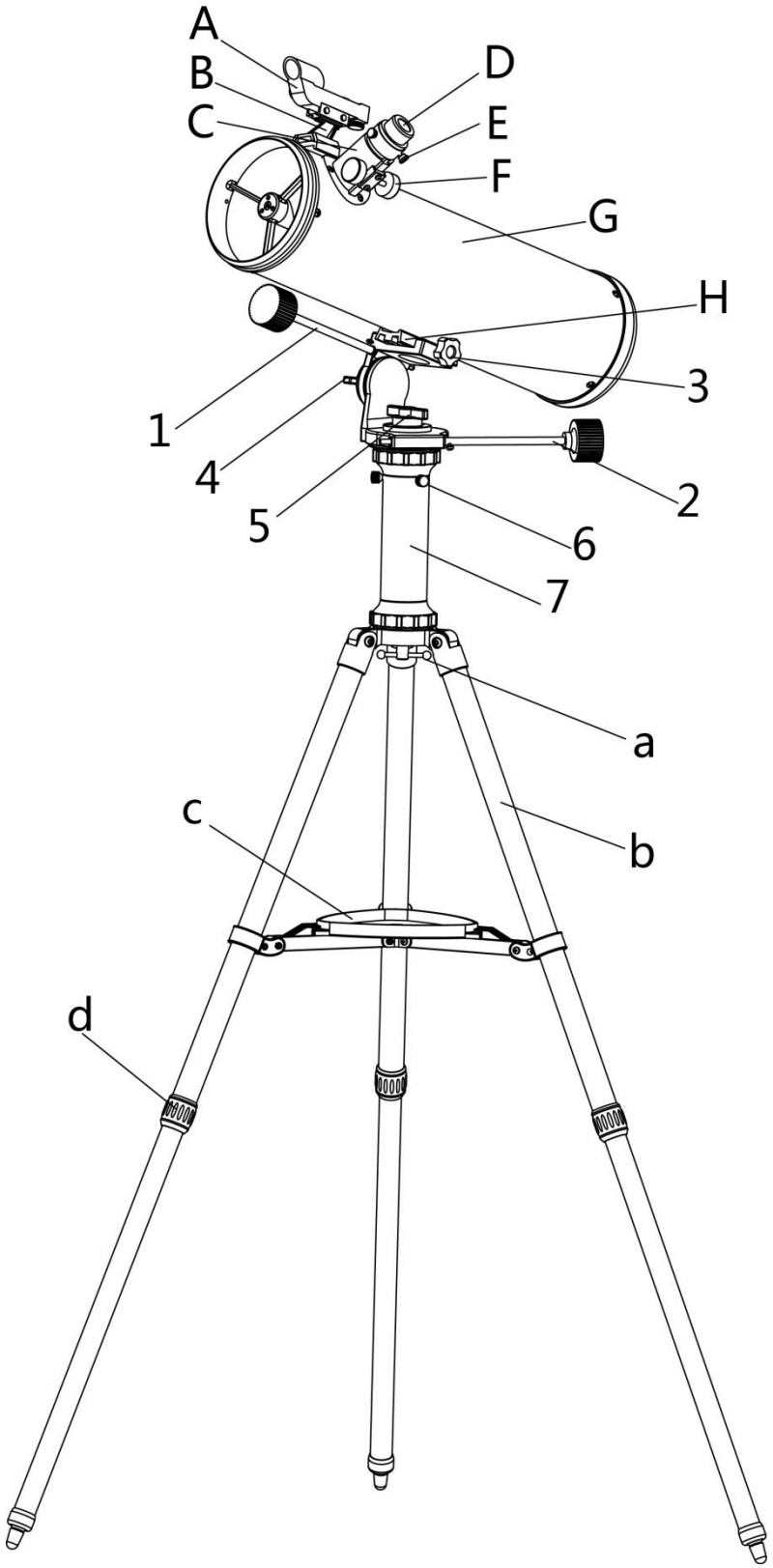


A. Dew Cap/Sun Shade
B. Telescope Main Tube
C. Dovetail
D. Finderscope
E. Finderscope Bracket
F. Finderscope Alignment Screws
G. Focus Locking Screw
H. Eyepiece
I. Diagonal
J. Focus knob

1.ALT slow motion control knob
2. AZ slow motion control knob
3.Dovetail Clamping knob
4. Altitude (ALT) Clutch knob
5.Azimuth (AZ) Clutch knob
6. Extension Tube Locking Screws
7. Extension Tube

a.3/8'' Tripod Clamping Screw
b. Tripod Leg (Extendable)
c. Accessory Tray
d. Tripod Extension Locking Ring

REFLECTOR

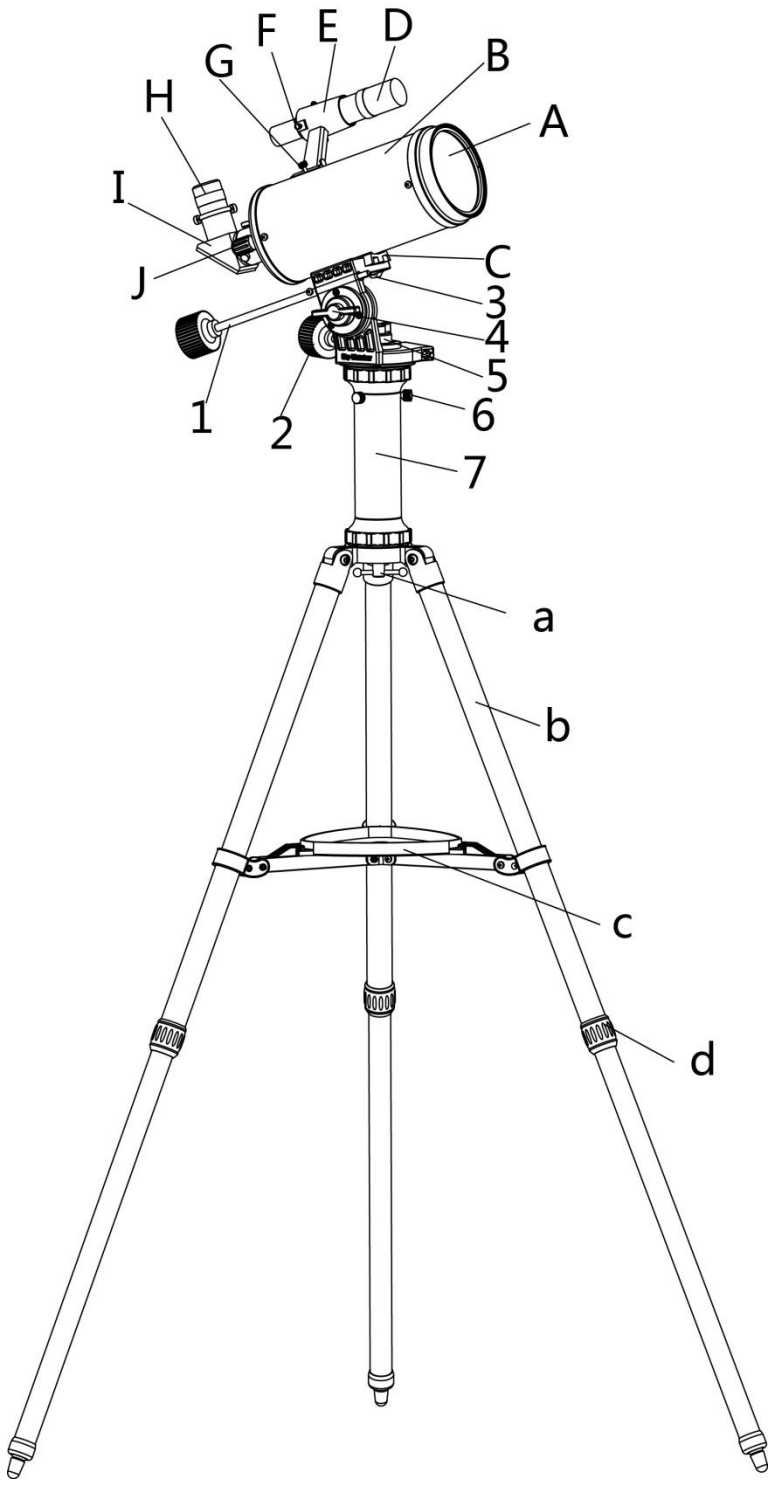


A. Red Dot Finder
B. Red Dot Finder Bracket
C. Focus Tube
D. Eyepiece
E. Eyepiece Locking Screw
F. Focus knob
G. Telescope Main Tube
H. Dovetail

1.ALT slow motion control knob
2. AZ slow motion control knob
3.Dovetail Clamping knob
4. Altitude (ALT) Clutch knob
5.Azimuth (AZ) Clutch knob
6. Extension Tube Locking Screws
7. Extension Tube

a.3/8'' Tripod Clamping Screw
b. Tripod Leg (Extendable)
c. Accessory Tray
d. Tripod Extension Locking Ring

MAKSUTOV



A. Dust Cap(not shown, remove before viewing)
B. Telescope Main Tube
C. Dovetail
D. Finderscope
E. Finderscope Bracket
F. Finderscope Alignment Screws
G. Finderscope Bracket Locking Screw
H. Eyepiece
I. Diagonal
J. Focus knob

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Before you begin

This instruction manual is applicable to 3 models. Take a moment to find the model of your telescope. Follow the instructions for your specific model in the manual. Read the entire instructions carefully before beginning. Your telescope should be assembled during daylight hours. Choose a large, open area to work to allow room for all parts to be unpacked.

PART 1: Assembling your telescope

1.1 SETTING UP THE AZ PRONTO MOUNT AND TRIPOD

1.1.1 With the standard tripod

①Fully expand the three legs of the standard tripod on level ground(Fig.1.1.1a).

②Install the accessory tray on the tripod as shown in Fig.1.1.1b.

③Align the 3/8" socket at the base of the mount with the 3/8” bolt on the tripod head. Lock the mount on the tripod by tightening the bolt(Fig.1.1.1c).

④Extend the legs to the desired height and, by adjusting each leg separately, make sure the mount is level.

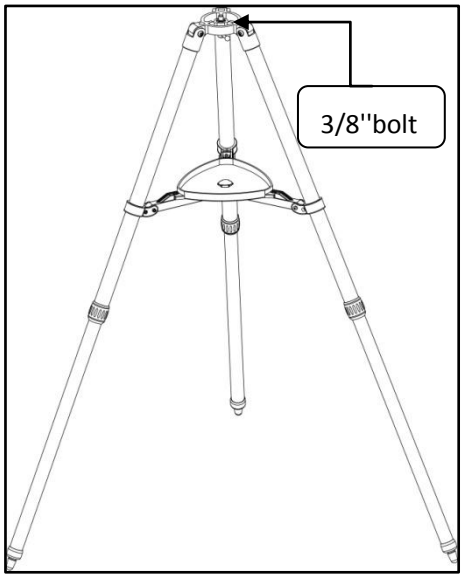


Fig.1.1.1a

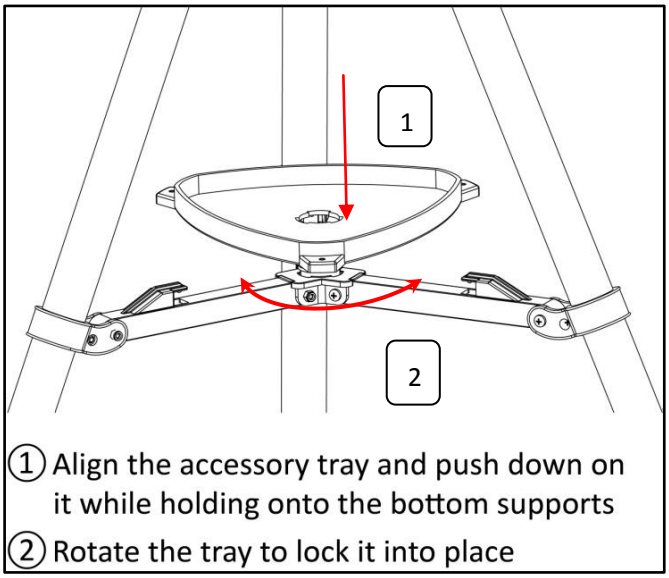


Fig.1.1.1b

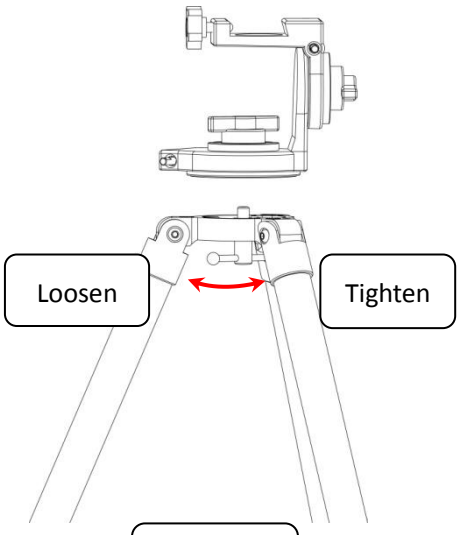


Fig.1.1.1c

WARNING: The accessory tray of the standard tripod ensures that the tripod legs are firmly expanded, which prevents the tripod from accidentally tipping over. When using the AZ PRONTO mount on the standard tripod, the accessory tray should always be used to ensure stability.

TIP: Completely tightening the azimuth clutch knob will prevent the mount from rotating around its azimuth axis and make it easier to screw the mount onto the tripod.

1.1.2 With extended tripod

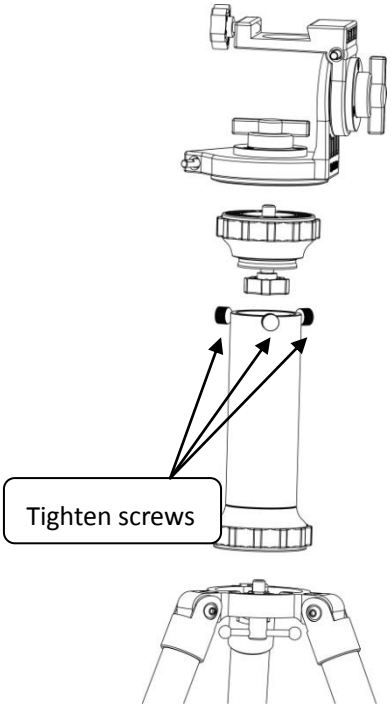


Fig.1.1.2a

1. Loosen 3 screws on the side of the extension tube; take out the head piece of the extension tube; insert and screw it on tightly into the base of AZ PRONTO.

2. Insert extension tube head piece along with AZ PRONTO base into the extension tube; tighten the 3 screws on the side; make sure the AZ PRONTO base is securely connected with the extension tube.

3. Use the tripod's 3/8" bolt to securely attach the assembled extension tube and AZ PRONTO onto the tripod.

1.2 Installation of the slow motion controls

1.2.1 Installation of the slow motion controls for refracting lens telescopes and Maksutov telescopes (Fig.1.2.1a):

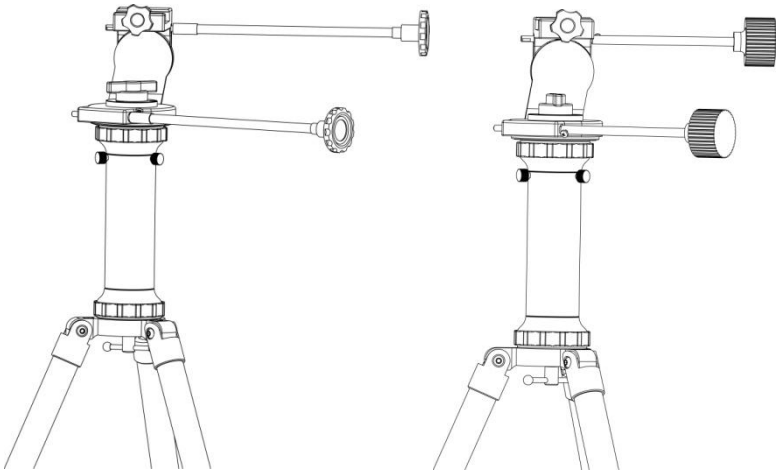


Fig.1.2.1a

1.2.2 Installation of the slow motion controls for Newtonian reflective Telescopes(Fig.1.2.2a)：

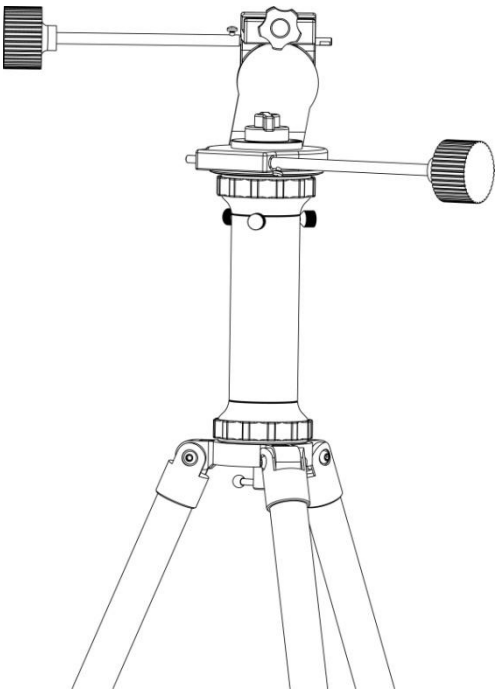


Fig.1.2.2a

1.3 Telescope assembly

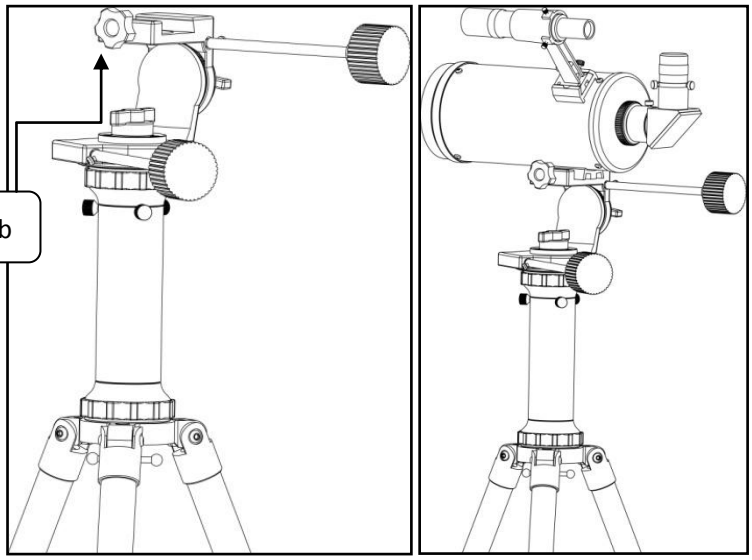


Fig.1.3a

Fig.1.3b

①Loosen the altitude clutch knob and rotate the saddle until the dovetail groove is leveled, then tighten the altitude clutch knob again(Fig.1.3a).

②Loosen the dovetail clamping knob until nothing is obstructing the dovetail groove in the saddle(Fig.1.3b).

③Hold the telescope horizontally and slide the dovetail bar of the telescope into the dovetail groove of the saddle(Fig.1.3b).

④Tighten the dovetail clamping knob until the bar is securely clamped in the groove.

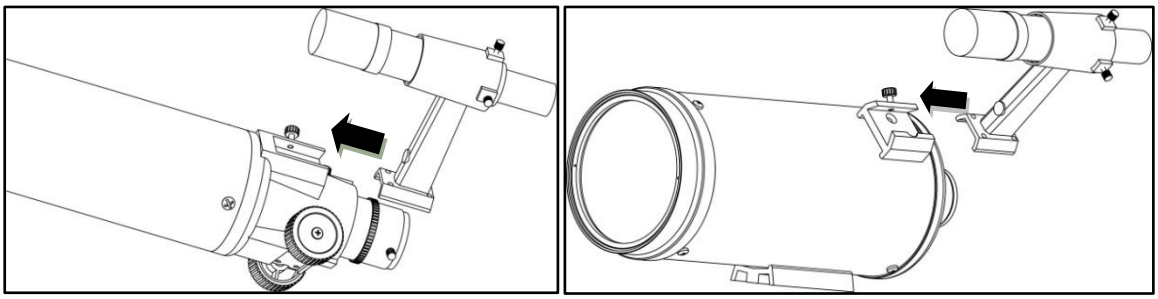
(DO NOT LET GO OF THE TELESCOPE UNTIL YOU ARE SURE IT IS FIRMLY ATTACHED TO THE SADDLE).

1.4 Finderscope/Red dot finder assembly

1.4.1 Attaching the finderscope bracket(Fig.1.4.1a)

①Locate the finderscope optical assembly.

②Slide the finderscope bracket into the rectangular slot and tighten the screw to hold the mount in place.



(refractor) **(Maksutov)**

Fig.1.4.1a

1.4.2 Attaching the red dot finder(Fig.1.4.2a)

①Slide the red dot finder bracket into the rectangular and tighten the screw to hold the red dot finder in place.

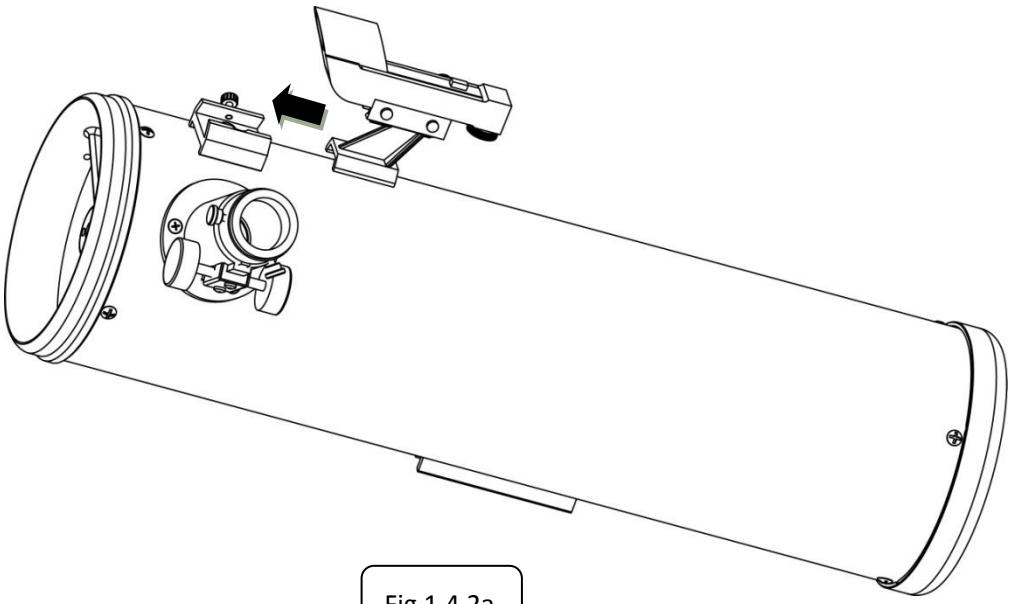


Fig.1.4.2a

1.5 Eyepiece assembly

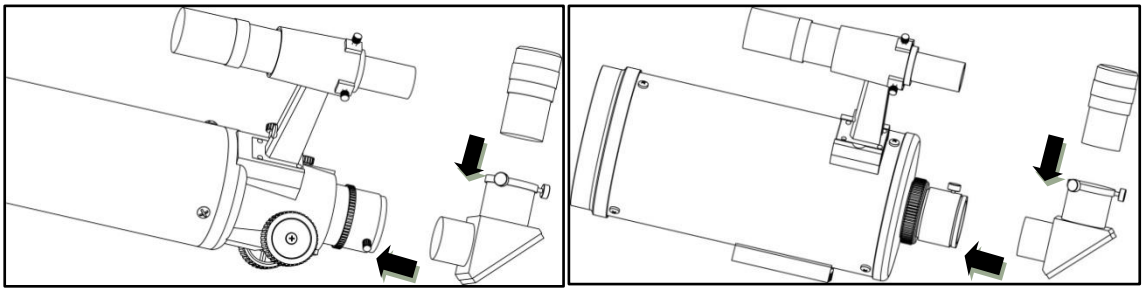
1.5.1 Inserting eyepiece for refractor and Maksutov(Fig.1.5.1a)

① loosen the thumbscrew on the end of the focus tube.

② Insert the diagonal into the focus tube and re-tighten the thumbscrew to hold the diagonal in place.

③ Loose the thumbscrews on the diagonal.

④ Insert the desired eyepiece into diagonal and secure by re-tightening thumbscrews.



(refractor) **(Maksutov)**

Fig.1.5.1a

1.5.2 Inserting eyepiece for reflector(Fig.1.5.2a)

① Unscrew the thumbscrews on the end of the focus tube to remove the black plastic end-cap.

② Insert the desired eyepiece then re-tighten thumbscrews to hold the eyepiece in place.

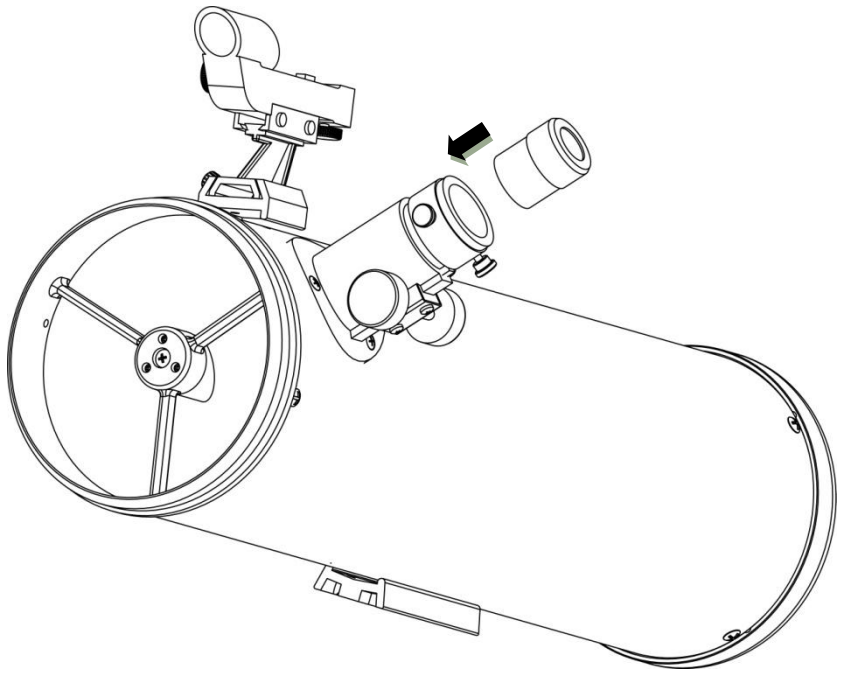


Fig.1.5.2a

PART2: Operating Your Telescope

2.1 Using the AZ PRONTO Mount

2.1.1 Manually rotating the AZ PRONTO mount

Refer to the following diagrams:

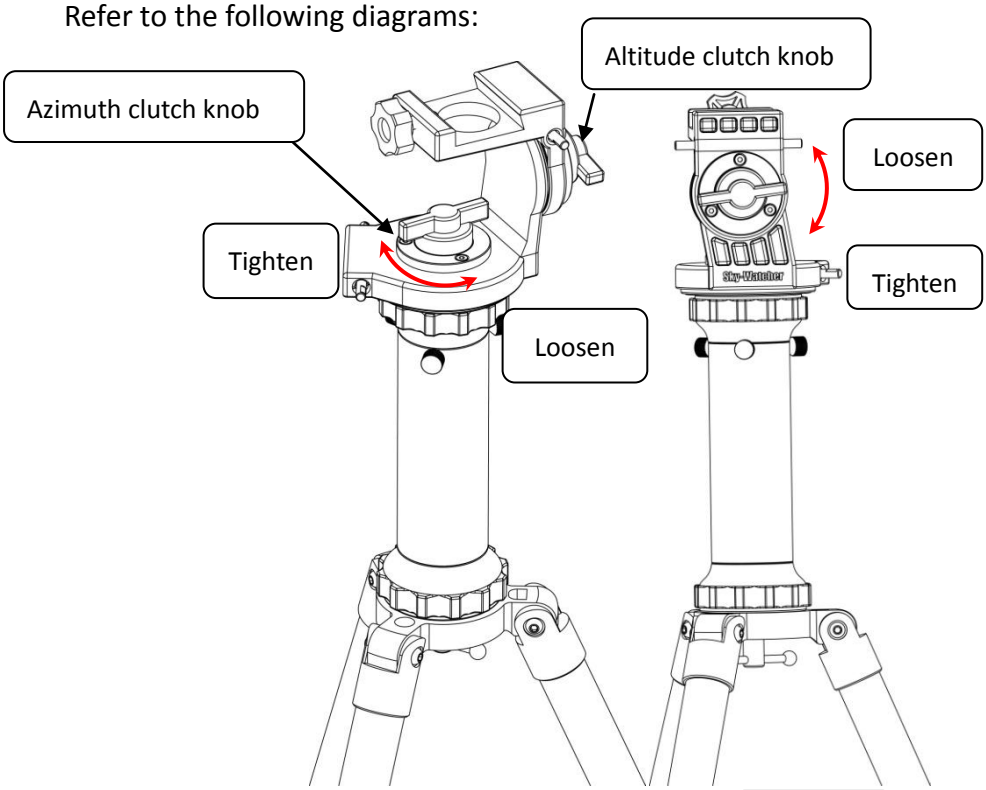


Fig.2.1.1a Fig.2.1.1b

1. Loosen the Azimuth clutch knob to manually rotate the telescope horizontally(Fig.2.1.1a).
2. Loosen the Alt clutch knob to manually rotate the telescope vertically(Fig.2.1.1b)

TIP:

The mount clutch knobs allow to adjust the friction of the clutches. Fully loosen the clutches to move the telescope quickly. Fully tighten the clutches to get a safe fixed position. Intermediate adjustment allows fluid movement with enough resistance to keep the telescope from tipping over.

2.1.2 Use of the slow motion controls

①The altitude clutch knob and the azimuth clutch knob must be at least a little tightened to have enough friction to allow slow motion.

②The slow motion controls allow tracking slowly moving objects such as celestial objects or far away ships at sea.

③The slow motion controls allow an observed object to be centered with high precision in the eyepiece of a telescope

TIP:

You can freely choose to attach the telescope and the slow motion controls in any direction at your best convenience, to have the slow motion controls in reach while observing through the telescope.

2.2 Aligning and using the finderscope/red dot finder

2.2.1 Aligning and using the finderscope

These fixed magnification scopes mounted on the optical tube are very useful accessories. When they are correctly aligned with the telescope, objects can be quickly located and brought to the center of the field. Alignment is best done outdoors in day light when it's easier to locate objects. If it is necessary to refocus your finderscope, sight on an object that is at least 500 meters (or yards) away. For 6x30 finderscope: loosen the locking ring by unscrewing it back towards the bracket. The front lens holder can now be turned in and out to focus. When focus is reached, lock it in position with the locking ring (Fig.2.2.1a).

① Choose a distant object that is at least 500 yards away and point the main telescope at the object. Adjust the telescope so that the object is in the center of the view in your eyepiece.

② Check the finderscope to see if the object centered in the main telescope view is centered on the crosshairs.

③For the 6x30 finderscope with spring loading, adjust only the two small screws (Fig.2.2.1b).

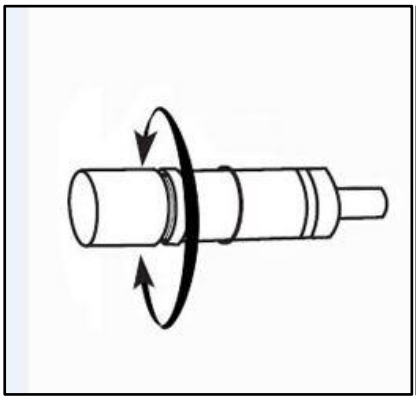


Fig.2.2.1a

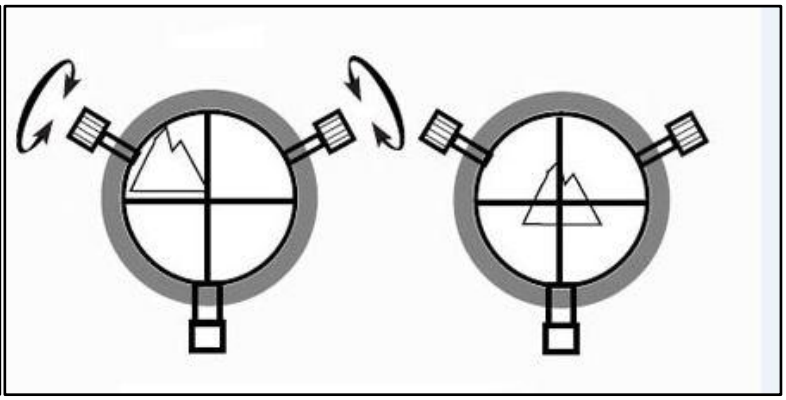


Fig.2.2.1b

2.2.2 Aligning and using the red dot finder

The Red Dot Finder is a zero magnification pointing tool that uses a coated glass window to superimpose the image of a small red dot onto the night sky. The Red Dot Finder is equipped with a variable brightness control, azimuth adjustment control, and altitude adjustment control (Fig.2.2.2a). The Red Dot Finder is powered by a 3-volt lithium battery located underneath at the front. To use the Finder, simply look through the sight tube and move your telescope until the red dot merges with the object. Make sure to keep both eyes open when sighting.

Like all finderscopes, the Red Dot Finder must be properly aligned with the main telescope before use. This is a simple process using the azimuth and altitude control knobs.

① Open the battery cover by pulling it down (you can gently pry at the 2 small slots) and remove the plastic shipping cover over the battery(Fig.2.2.2b).

② Turn on the Red Dot Finder by rotating the variable brightness control clockwise until you hear a "click". Continue rotating the control knob to increase the brightness level.

③ Insert a low power eyepiece into the telescope's focuser. Locate a bright object and position the telescope so that the object is in the center of the field of view.

④ With both eyes open, look through the sight tube at the object. If the red dot overlaps the object, your Red Dot Finder is perfectly aligned. If not, turn its azimuth and altitude adjustment controls until the red dot is merged with the object.

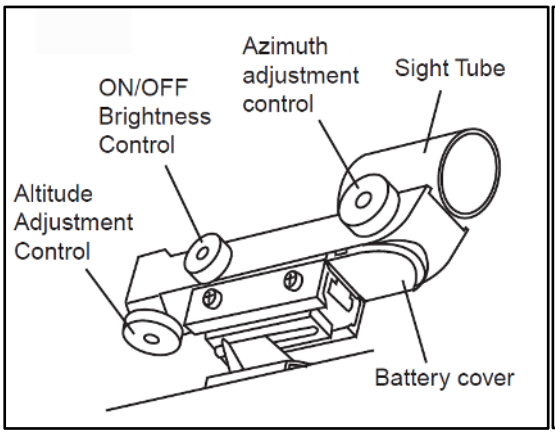


Fig.2.2.2a

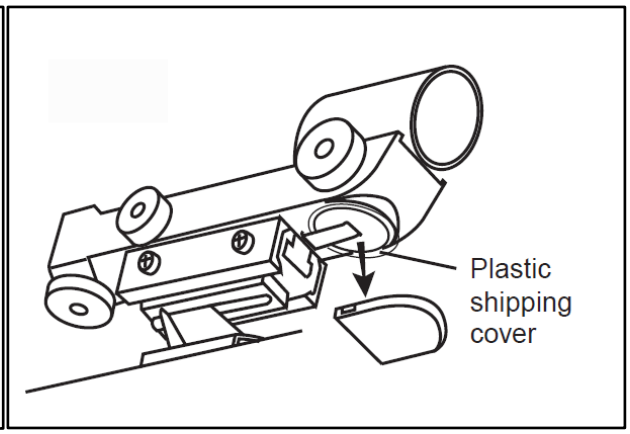


Fig.2.2.2b

2.3 Focusing the telescope

Slowly turn the focus knobs under the focuser, one way or the other, until the image in the eyepiece is sharp (Fig.2.3a). The image usually has to be finely refocused over time, due to small variations caused by temperature changes, flexures, etc. This often happens with short focal ratio telescopes, particularly when they haven't yet reached outside temperature. Refocusing is almost always necessary when you change an eyepiece.

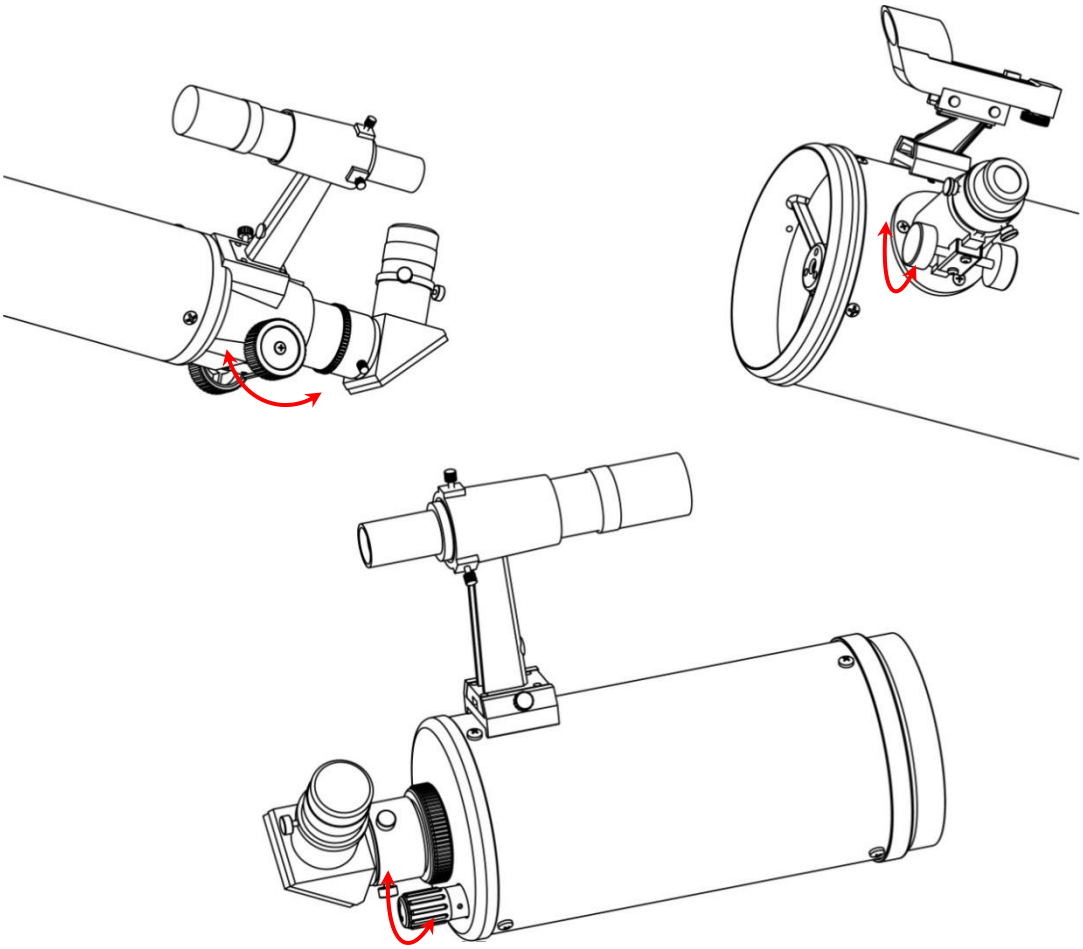


Fig.2.3a

2.4 Choosing the appropriate eyepiece

The magnification produced by a telescope is determined by the focal length of the eyepiece that is used with it. To determine a magnification for your telescope, divide its focal length by the focal length of the eyepieces you are going to use. For example, a 10mm focal length eyepiece will give 80X magnification with an 800mm focal length telescope.

When you are looking at astronomical objects, you are looking through a column of air that reaches to the edge of space and that column seldom stays still. Similarly, when viewing over land you are often looking through heat waves radiating from the ground, house, buildings, etc. Your telescope may be able to give very high magnification but what you end up magnifying is all the turbulence between the telescope and the subject. A good rule of thumb is that the usable magnification of a telescope is about 2X per mm of aperture under good conditions.

Too much magnification and too small a field of view can make it very hard to find things. It is usually best to start at a lower magnification with its wider field of view and then increase the magnification when you have found what you are looking for. First find the moon then look at the shadows in the craters!

PART3: Observing the sky

3.1 Sky Conditions

Sky conditions are usually defined by two atmospheric characteristics, seeing, or the steadiness of the air, and transparency, light scattering due to the amount of water vapour and particulate material in the air. When you observe the Moon and the planets, and they appear as though water is running over them, you probably have bad "seeing" because you are observing through turbulent air. In conditions of good "seeing", the stars appear steady, without twinkling, when you look at them with unassisted eyes (without a telescope). Ideal "transparency" is when the sky is inky black and the air is unpolluted.

3.2 Selecting an Observing Site

Travel to the best site that is reasonably accessible. It should be away from city lights, and upwind from any source of air pollution. Always choose as high an elevation as possible; this will get you above some of the lights and pollution and will ensure that you aren't in any ground fog. Sometimes low fog banks help to block light pollution if you get above them. Try to have a dark, unobstructed view of the horizon, especially the southern horizon if you are in the Northern Hemisphere and vice versa. However, remember that the darkest sky is usually at the "Zenith", directly above your head. It is the shortest path through the atmosphere. Do not try to observe any object when the light path passes near any protrusion on the ground. Even extremely light winds can cause major air turbulence as they flow over the top of a building or wall. Observing through a window is not recommended because the window glass will distort images considerably. And an open window can be even worse, because warmer indoor air will escape out the window, causing turbulence which also affects images. Astronomy is an outdoor activity. The best conditions will have still air, and obviously, a clear view of the sky. It is not necessary that the sky be cloud-free. Often broken cloud conditions provide excellent seeing.

3.3 Choosing the Best Time to Observe

Do not view immediately after sunset. After the sun goes down, the Earth is still cooling, causing air turbulence. As the night goes on, not only will seeing improve, but air pollution and ground lights will often diminish. Some of the best observing time is often in the early morning hours. Objects are best observed as they cross the meridian, which is an imaginary line that runs through the Zenith, due North-South. This is the point at which objects reach their highest points in the sky. Observing at this time reduces bad atmospheric effects. When observing near the horizon, you look through lots of atmosphere, complete with turbulence, dust particles and increased light pollution.

3.4 Cooling the Telescope

Telescopes require at least 10 to 30 minutes to cool down to outside air temperature. This may take longer if there is a big difference between the temperature of the telescope and the outside air. This minimizes heatwave distortion inside telescope tube (tube currents). Allow a longer cooling time for larger optics.

3.5 Adapting Your Eyes

Do not expose your eyes to anything except red light for 30 minutes prior to observing. This allows your pupils to expand to their maximum diameter and build up the levels of optical pigments, which are rapidly lost if exposed to bright light. It is important to observe with both eyes open. This avoids fatigue at the eyepiece. If you find this too distracting, cover the non-used eye with your hand or an eye patch. Use averted vision on faint objects: The center of your eye is the least sensitive to low light levels. When viewing a faint object, don't look directly at it. Instead, look slightly to the side, and the object will appear brighter.

PART4: Proper Care for Your Telescope

4.1 Cleaning Your Telescope

Replace the dust cap over end of telescope whenever not in use. This prevents dust from settling on mirror or lens surface. Do not clean mirror or lens unless you are familiar with optical surfaces. Clean eyepieces with special lens paper only. Eyepieces should be handled with care, avoid touching optical surfaces.

Caution!

SUN DANGER WARNING:

- **NEVER USE YOUR TELESCOPE TO LOOK DIRECTLY AT THE SUN WITHOUT CERTIFIED PROTECTIVE SUN FILTER. PERMANENT EYE DAMAGE WILL RESULT. USE A CERTIFIED SOLAR FILTER FIRMLY MOUNTED ON THE FRONT OF THE TELESCOPE FOR VIEWING THE SUN.**
- **WHEN OBSERVING THE SUN, PLACE A DUST CAP OVER YOUR FINDERSCOPE OR REMOVE THE FINDERSCOPE TO PROTECT YOU FROM ACCIDENTAL EXPOSURE.**
- **NEVER USE A NON-CERTIFIED EYEPIECE-TYPE SOLAR FILTER AND NEVER USE YOUR TELESCOPE TO PROJECT SUNLIGHT INTO ANOTHER SURFACE, THE INTERNAL HEAT BUILD-UP WILL DAMAGE THE TELESCOPE OPTICAL ELEMENTS.**