



# New MoonLight II



**Operating Instructions**

# SAFETY PRECAUTION -Please read these before operating the telescope.-

For safety reasons, please read all the safety precautions before operating the telescope.

※We anticipated different situations resulted by mistakenly operating the telescope. There are two categories, "WARNING" and "CAUTION".

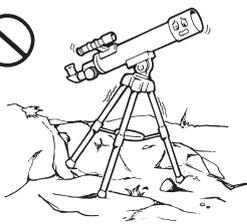
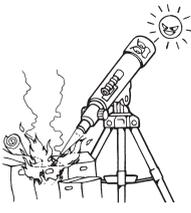
The following icons will be used in this instruction manual.		
 FORBIDDANCE	 EASILY SET ON FIRE	 FINGER INJURY

**! WARNING** Operating the telescope without following these instructions can result in severe injury or permanent damage to the telescope.

Never observe the sun directly through your telescope. This is very dangerous as it may cause immediate and permanent harm to your eye.



**! CAUTION** Operating the telescope without following these instructions can result in injury or physical damage to the telescope.

  <p>Always make sure to set the telescope on a flat and even ground. The fall will damage the telescope and could cause bodily injury.</p>	  <p>Loose screws may lead to damaging the telescope and may result in bodily injury.</p>
   <p>Please do not leave telescope at places that sunlight can reach. This may result in setting fire due to the concentrated light from the optics. Please store properly after each use.</p>	   <p>Please pay extra attention when children are using the telescope. The mount and tripod sections may pinch users' finger if not careful.</p>
 <p>Children may accidentally swallow the cap and eyepiece. Get immediate medical attention if such situation occurs.</p>	 <p>Keep all plastic bags (form packaging) away from children to avoid danger of suffocation or choking.</p>

Before reading this instruction manual:

- This booklet is the instruction manual for NEW MOONLIGHT II Telescope. Although the shape of the telescope in the pictures may be different, the operating method is the same.
- It is prohibited to copy or reproduce parts or all parts of this instruction manual.
- The specification, design or other information in this instruction manual may be changed and edited from time to time without notification.
- When operating the telescope, please follow the instructions in this manual. Pay special attention to the WARNINGS and CAUTIONS listed in this booklet for your safety.
- This instruction manual is written clearly and comprehensively. If there are sections or statements that is not clear, has wrong descriptions or misspelled, please feel free to inform us.
- Kenko Tokina Company Limited will not be responsible for any losses, damages or claims from a third person against the users due to improper use of the telescope.

# Package Contents

Be sure to check all listed items are included with your purchase.



Telescope Optical Tube



20mm Eyepiece



Tripod



4mm Eyepiece



Finder



Diagonal

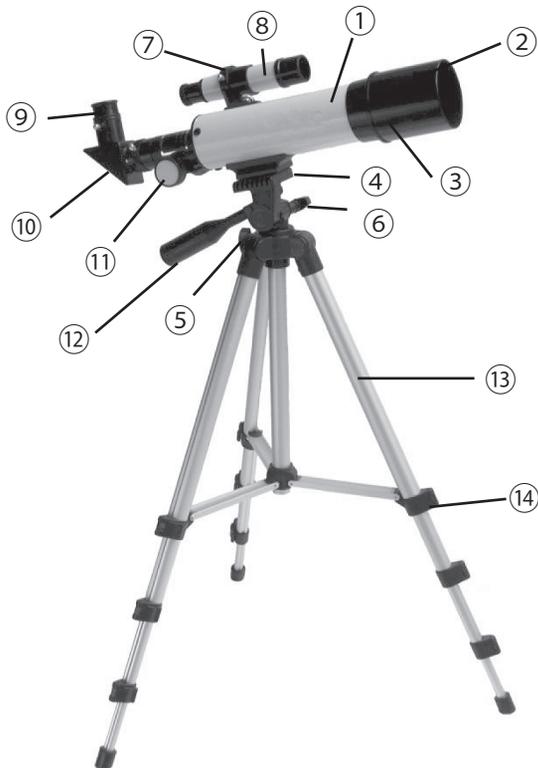


3x Barlow Lens



1.5x Erecting Lens

## Part Name of the merchandise



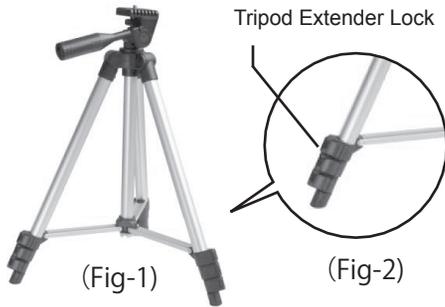
- ① Telescope Optical Tube
- ② Hood
- ③ Objective Lens (Interior)
- ④ Azimuthal Mount
- ⑤ Elevator Locking Screw (Reverse Side)
- ⑥ Telescope Tube Swing Locking Screw
- ⑦ Finder Optical Axis, Adjustment Screw (3 locations)
- ⑧ Finder
- ⑨ Eyepiece
- ⑩ Diagonal
- ⑪ Focus Knob
- ⑫ Altitude motion fixing shaft
- ⑬ Tripod
- ⑭ Tripod Extender Lock

# SAFETY PRECAUTION

This section covers the assembly instructions for your New Moon Light II telescope. It is highly recommended that the first setup of the telescope should be done indoors. This way it will be easier to identify all the various parts and familiarize yourself with the correct assembly procedure before attempting out in the field.

## 1. Setting Up the Tripod

Stand the tripod upright and pull the tripod legs apart until each leg is fully extended (Fig-1). As necessary, adjust the leg-length releasing the tripod extender lock (Fig-2).

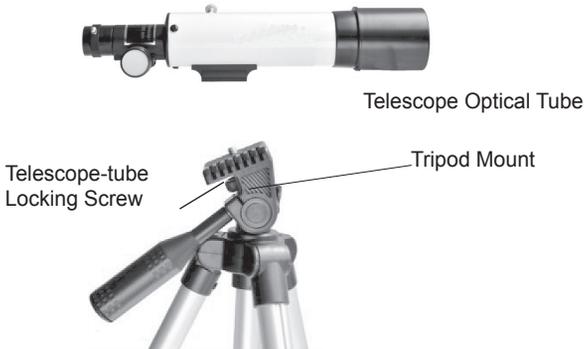


Adjust the height of tripod by extending the elevator part by loosening the elevator locking screw.

## 2. Attaching the Telescope Optical Tube to the Tripod

Place and fix the telescope optical tube on the tripod using the telescope-tube locking screw. At this time, make sure to fit the concave part of the telescope tube and the convex part of the mount so that the tube is aligned properly.

**NOTE:** Attaching the telescope optical tube to the tripod mount should be firmly secured. It is dangerous if the tubes fall off caused by an unsecured locking screw.



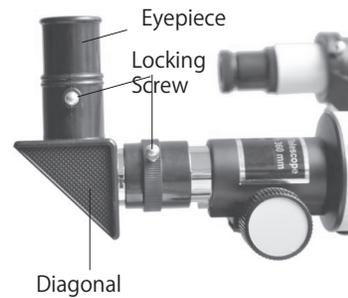
## 3. Attaching the Finder to the Telescope Optical Tube

Attach the finder to the proper location on the telescope optical tube. The finder should be aligned before using the telescope (See page 5 for proper aligning of the finder.).



## 4. Installing the Eyepiece

To observe an erect image with the telescope, you must use an eyepiece. Attach the eyepiece with the star diagonal like shown on the picture below and tighten the locking screws.



The eyepiece can be changed to different powers. This telescope comes with two eyepieces. Depending on the observed object, you can select your favorite eyepiece.

### ■ How to calculate the Powers of Telescope

$$\frac{\text{Focal Length of Objective Lens in (mm)}}{\text{Focal Length of Eyepiece in (mm)}} = \text{X Powers of Telescope}$$

Examples: When New MoonLight II with 20mm eyepiece is used:

$$\frac{360(\text{mm})}{20 (\text{mm})} = 18\text{xPowers}$$

# Aligning the Finder Scope

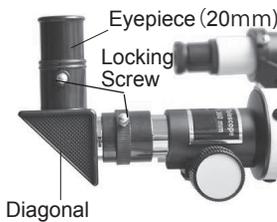
## ● What is a finder scope?

If you try to find a star with a telescope from the very beginning, it is very hard to catch the target astral object due to high-powers and narrow field of view of the telescope. The finder has a lower-powers and wider field of view compare to the main telescope and it is easier to find the positional relations between the stars. You can see the reticle in the center field of the finder and set the target astral object at this cross point.

In order to smoothly introduce the target astral object to the main tube through the finder scope, the finder must be collimated (aligned) with the telescope first. Please align the optical axis of the finder scope through the following steps before observing.

## ● Steps to align the finder scope

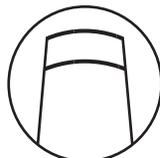
1) It is better to carry out most of this procedure during the daytime.



2) Aim the telescope at a small object that is about several km away, such as a chimney top or tip of an antenna.

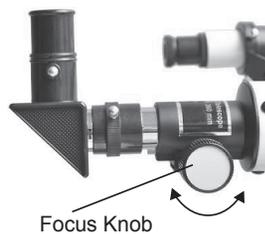


3) Center the object in the eyepiece.

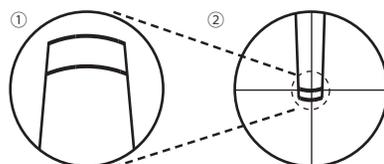


(View observed by 20mm eyepiece)

4) If it is not focused, slowly turn the focusing knob until the object comes into focus.

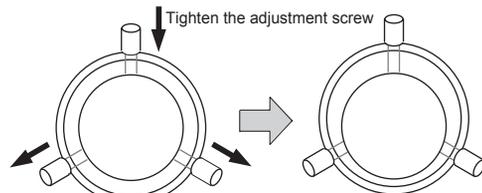
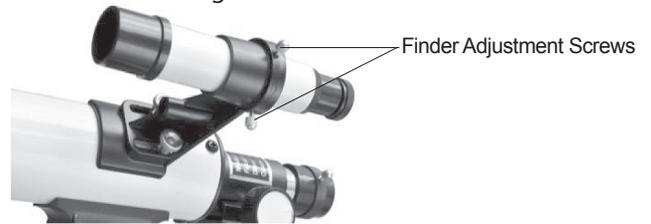


5) After that, look at the object with the finder scope this time. If the object has already been centered on the crosshair, alignment of the finder is not necessary.



(1) View observed by 20mm eyepiece  
(2) View observed by finder

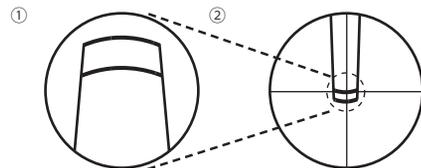
6) By adjusting (tighten or loosen) the 3 adjustment screws on the finder bracket, the direction of the finder can be changed.



Loosen the adjustment screws

※ For example, by tightening the adjustment screw on the top and loosening the two adjustment screws on the bottom, the finder can be turned to face upwards (see the above picture for reference).

7) When the object seen through the main tube has been centered on the crosshair of the finder, slowly tighten the adjustment screws equally to fix the finder.



(1) View observed by 20mm eyepiece  
(2) View observed by finder

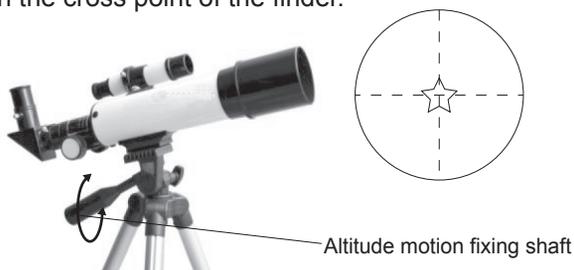
8) The alignment of the finder scope has been completed. Please make sure that the axis of the scope is not out of alignment before star observation.

## Using your telescope

1) You can find the target celestial objects with your eyes. It is easier to find out with the planisphere or other star maps.



2) Before using the telescope, identify your object with your eyes first. Afterwards, turn the altitude adjustment rod to move up and down. Look through the finder scope at the same time and set the object on the cross point of the finder.



3) Set the 20mm eyepiece on the telescope. After the target celestial object has entered the field of view of the main tube, turn the focusing knob until the object comes into focus.



4) If you can already see your target celestial object, try to change to the 4mm eyepiece, which has a higher magnification.



5) Normally, image you see through the telescope and the finder scope will be upside down. Diagonal prism can erect the upside down image, but the image will be reversed. By inserting a 1.5X erecting lens between the telescope and the eyepiece, you can observe an upright and right reading image. However, the 1.5X erecting lens will darken and lower the resolution of the image. (The finder can only provide an upside down and reversed image)



6) By placing a 3X Barlow lens between the telescope and the eyepiece, magnification can increase 3 times more. However, it will darken and lower the resolution of the image. For this reason, please use the 3X Barlow lens only for high power observation.



**CAUTION** Never observe the sun directly through your telescope. This is very dangerous as it may cause immediate and permanent harm to your eye.

## Maintenance and Caring for your telescope

Telescope is a precision instrument and is sensitive to dust, moisture, saline matter, heat and impact. During storage, please consider the following and handle your telescope with care.

- 1) Please store the telescope properly after each use.
- 2) Please keep the telescope in a well-ventilated and normal room temperature. A damp environment can lead to mold growth.
- 3) If you are going to keep the telescope assembled, cover the whole telescope with a large plastic cover to protect it from dust.

- 4) Do not wipe off dust on the lens. Instead, use a blower to blow it away.
- 5) If fingerprints or dirt are attached on the lens, please carefully clean it with lens cleaning solution and microfiber cloth.
- 6) The lenses are precisely set for observing; never disassemble the telescope for cleaning.

# Troubleshooting

Read the instruction manual and try these trouble-shooting tips before taking the telescope in for repair.

## **Problem: #1**

### **I cannot see any images through the telescope**

Possible problems and solutions

Q) Have you set the eyepiece?

A) Set the eyepiece.

Q) Is there any condensation on the objective lens or the eyepiece?

A) Fan the objective lens or eyepiece until it is dry. If the problem persists, move the telescope back to indoor for natural drying.

Q) Is the magnification too high?

A) Use the 20mm eyepiece at the beginning stage.

Q) Is the image out of focus?

A) Slowly turn the focusing knob until it gets focused.

Q) Are the finder and the main tube looking at different places?

A) Confirm whether the finder and the main tube are looking at the same star or not. Try to do the alignment again if necessary.

## **Problem:#2**

### **I do not know which star I am looking at**

Possible problems and solutions

Q) Is the finder and the main tube looking at different places?

A) Confirm whether the finder and the main tube are looking at the same star or not. Try to do the alignment again if necessary.

Q) Is the telescope correctly facing the target star?

A) Confirm that the target has been set on the center of the crosshair of the finder scope.

Q) Is the magnification too high?

A) Use the 20mm eyepiece at the beginning stage.

If you have checked the above problems but still experiencing problems with your telescope, please contact the dealer that you bought the telescope from or Kenko Tokina Co., Ltd.

## Specifications

DESCRIPTION		SPECIFICATIONS
Optical Type		Reflection
Focal Length		360mm(14.17 in)
Aperture (mm)		50mm(1.97 in)
Aperture Ratio		1:7.2
Limiting Stellar Magnitude		10.2
Light Gathering Power		51x
Resolution		2.4 arc seconds
Finder		5x24
Eyepiece ( ) :when used the 3xbarlow Lens	4mm	90x (270x)
	20mm	18x (54x)

## WARRANTY

- 1) Repairs can be performed from an authorized dealer or directly from Kenko Tokina Co., Ltd.
  - 2) Clearly state the problem(s) and the area(s) that need repairing.
  - 3) The warranty does not cover the product in the following case:
    - a. Damages due to misuse
    - b. Damages due to improper storage
    - c. Damages due to fire, flooding or other natural disasters
    - d. Damages caused by any unauthorized repairing, remodeling or disassembling
    - e. Other damages similar to the above
    - f. Changing of expendable items
  - 4) This warranty shall be void if the sales receipt does not show purchase date or the name of the authorized dealer.
  - 5) Customer will be responsible for the inbound repair shipping charges.
  - 6) The warranty only cover the purchased product.
  - 7) The warranty only covers the non-chargeable repairs. It is not used to protect any legal rights of customers.
- Attention: Please clearly describe the problem(s) and the area(s) that need to be repaired.

### Personal Privacy Information

- Personal information provided will be disposed immediately.
- Data such as, age or sex may be used only for statistical use.
- Our company will not share any personal information of our customers to a third party other than the following situations:

- 1) We have a signed consent from customers.
- 2) In order to accomplish the repair request of the customers, some personal information within necessary level, may be shared with the subcontracting companies. However, according to our company's regulations, we are responsible for the risk management of personal information and supervision to such companies therefore we will only release information deemed necessary.