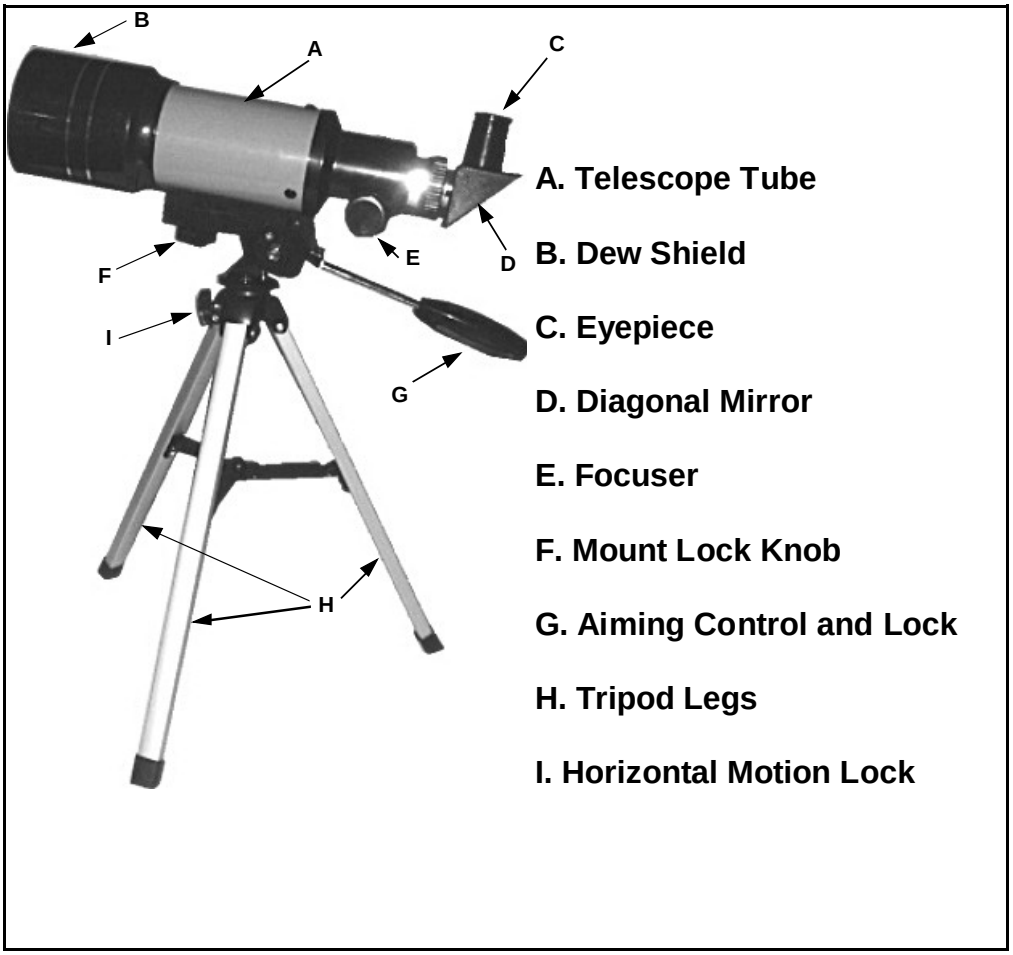
GG2134

Spotting Scope

Instruction Manual

Here are the Main Parts of Your



WARNING!

Do not aim your telescope at the sun, or anywhere near the sun! Instant and irreversible damage can occur, including blindness!

Do not let children use any telescope without adult supervision at any time the sun is above the horizon.

Introduction

Congratulations on purchasing your new telescope. We hope it will give you many years of enjoyment as it opens your eyes to some of Nature's most wondrous sights.

Please read this manual carefully and completely. It contains the information you need to know to obtain the best results from your telescope.

If you quickly passed over the sun warning on the previous page, please go back and read it now.

If at any time you need assistance in assembling or operating your telescope you may contact us by mail, e-mail, fax or phone. The addresses and numbers are given later in this manual on the warranty page.

Good Luck with your new hobby, and may all your skies be clear!

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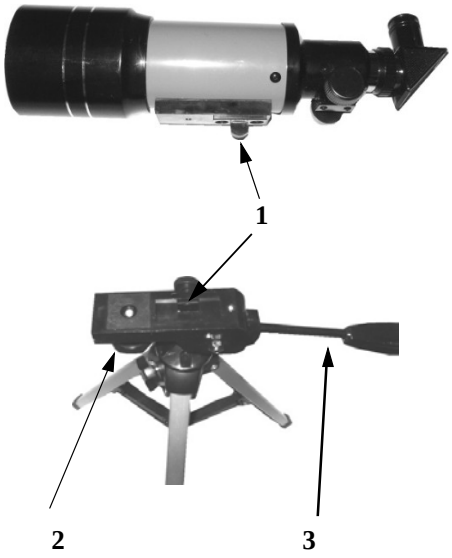
Assembly:

Remove all of the pieces from the box and lay them out so you can clearly see them. Check that you have all parts. Keep the box for storage, or if you ever need to return the telescope for service.



1) Gently pull the aluminum tripod legs apart as far as they will go until the center leg braces sit flat, in a horizontal position.

2)The telescope tube has a mounting tab (1) on its underside. Place this tab into the slot on top of the tripod.

3) Tighten the knurled knob (2) on the tripod head to hold the tube tightly to the tripod.

4) Screw the aiming control arm into the threaded socket at the rear of the mount.

4) Insert the diagonal mirror into the end of the telescope tube.

5) Insert the 25mm eyepiece (25mm is marked on the eyepiece) into the diagonal mirror.

6) Remove the dust cap from the large end of the telescope.

Using Your Telescope

1) Take your telescope outside. Do not try and use it by aiming through a window. If the window is closed the window glass will introduce reflections and distortions. If the window is open the moving air currents of different temperatures will cause distortions.

2)Let your telescope adjust to the outside temperature. Your telescope will perform much better if the lenses and the air inside the tube are all the same temperature as the outside air. This process may take up to 1/2 hour if the temperature difference between inside and outside is extreme.

3) Try to find a location that is away from glaring lights. If you are in a large town or city you may want to try and find a location in the country. Using a telescope in the skyglow of a town or city can cut its ability by half.

Astronomical Use:

1) Always start viewing with your 25mm. eyepiece. This is your low power eyepiece and its wide viewing field will make it easier to locate objects. By the way, you will notice that stars, when seen through your telescope, still look like points of light. This is because they are so far away. Even the largest telescopes show stars only as bright points.

2) Once you have located an object and the view is clear you may wish to change to the high power eyepiece. You will notice that your object looks bigger, but not as bright as seen with the 25mm. eyepiece. This is normal. If the viewing conditions are not good the high power image may not appear sharp or stable. If this happens, switch back to the 25mm. eyepiece and try the high power eyepiece another night. You can also achieve higher power by inserting the 3X Barlow lens between the telescope and either eyepiece. This triples the available power.

Care and Cleaning of Optics

Warning: Improper cleaning of optical components may void the warranty.

Optical components of a telescope will over time get dirty. The amount of dirt and or dust collected onto a lens or mirror should only be removed with the utmost care and this is at times best left to people with experience in this procedure. A considerable amount of dirt or dust must be present on the optical surface before one will notice the effect visually.

1. Keeping the dust caps on during storage of the telescope will reduce the amount of dust collected.

2 After using the telescope there might be dew condensation, on the optical surfaces. When the telescope is brought inside remove the dust caps and al low the moisture to evaporate naturally. Point the telescope downwards so as to minimize the collection of airborne dust.

3. Once the moisture is gone then replace the dust caps.

4. If you wish to remove dust from the lenses or mirrors you first should try using a can of filtered compressed air. Remove the dust cap and the dew shield in the case of the refractor style of telescope, or take the mirror cell out of the reflecting type. Once you are able to freely blow across the surface of the optics then begin by first pointing the can away from the piece and gently expel some air. This will remove any condensate in the air can lines and clear off dust that may have accumulated on the discharge tube. Next using short quick bursts of air carefully remove the dust particles. DO NOT HOLD THE TRIGGER OF THE COMPRESSED AIR FOR TOO LONG AS CONDENSATE MIGHT BE BLOWN OUT ACROSS THE OPTICAL SURFACE. If particles still remain after several attempts at removal than the telescope should probably be taken back to the dealer for cleaning.

The optics of your telescope should last a long time before they generally require major cleaning. By keeping the dust caps on and avoiding the temptation to handle the lenses or mirrors you will find that very little is needed in the way of optical maintenance.

What to Look For in the Sky

WARNING: DO NOT AIM YOUR TELESCOPE AT THE SUN OR ANYWHERE NEAR THE SUN! INSTANT AND IRREVERSIBLE DAMAGE CAN OCCUR, INCLUDING BLINDNESS!

DO NOT LET CHILDREN USE ANY TELESCOPE WITHOUT ADULT SUPERVISION AT ANY TIME THE SUN IS ABOVE THE HORIZON.

There is a whole universe of objects to be seen in the night sky so where does one start? Well lets examine the most visible objects first.

The Moon.

The moon is the easiest target to find in the night. When it is in the full position, when the entire face is lit, then it bathes the night with a silvery light washing out the rest of the sky from all but the brightest objects. The best time to view the moon is actually not when it is full but rather anytime up to the first quarter, this is when the face appears to be half lit up. The terminator on the moon, the dividing line between dark and light, shows the best features such as craters and mountains.

The Planets

The planets are our solar system companions. These range in size from moon size rocky bodies to giant gas balls which could hold 1000 Earths. To find the planets requires some information as to when they are visible. An astronomy magazine such as SkyNews or Sky and Telescope, will give you the locations of the planets from month to month. Most people who have looked up at night have probably seen some planets but did not realize it. A planet, when it is well clear of the horizon will not twinkle as do the stars. They are resolved by the eye as tiny balls as opposed to the stars which are infinitely small points of light. The easiest planets to view, when they are visible, are Venus, Mars, Jupiter and Saturn, Uranus and Neptune. Mercury is an object to look for but it is usually below the horizon and often is a challenge to find. Pluto is too small for most telescopes below 10" so do not worry about finding it at this time.

Each of the planets has its own interesting views. Venus is covered with clouds so all we see is an extremely bright light, the brightest next to the moon, however it like our moon goes through phases. In other words the planet surface will, as it travels around the sun, appear to have different amounts of it lit up. This gives the planet varying crescent shapes, as if a bite were taken out of it. Mars is the red planet. It is very noticeably red when rising above the horizon and stands out like a beacon in the night sky. The apparent brightness of Mars varies as the planet orbits around the

sun so throughout its time being visible to us it will brighten and dim depending on how our two planets are aligned relative to each other.

Jupiter is the largest planet in our solar system. It is the second brightest planet next to Venus. Jupiter also has moons of which 4 are easily visible through a telescope. In fact as you watch them throughout the evening you will see that they change their positions relative to each other and to Jupiter. It is possible with careful planning to actually see one of the moons disappear either in front of, or behind Jupiter as they travel around their planet. Another great feature of Jupiter is the cloud belt pattern. Jupiter is alive with weather activity and the planet's clouds have formed in time into belts which are visible to telescopes, when our skies allow it.

Saturn, the second largest planet, is not as bright as Jupiter and its moons are not as visible through small telescopes. However it has very large rings that encircle the planet which are spectacular. The planet appears as a pale yellow, as do the rings but one can spend hours looking at these. The major division in the rings, the Cassini division, is possible to see in a small telescope if the viewing is steady.

Uranus and Neptune are the last of the solar system gas giants. They do not yield up spectacular sights like Jupiter or Saturn, however they are part of our family and are rewarding to see as they can be a challenge to find.

Beyond our solar system there lies a multitude of objects to be found. Galaxies, nebulae and star clusters abound.