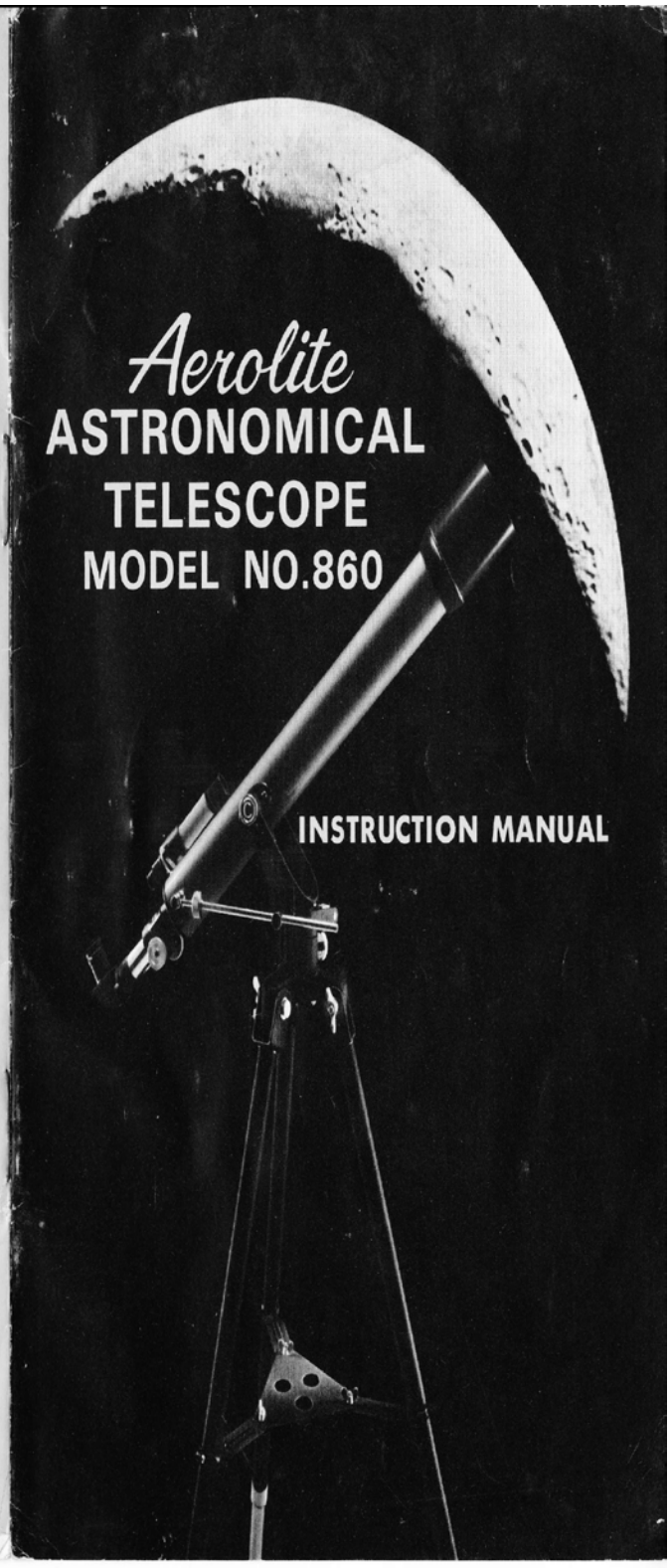


Aerolite
ASTRONOMICAL TELESCOPE
MODEL NO.860

INSTRUCTION MANUAL

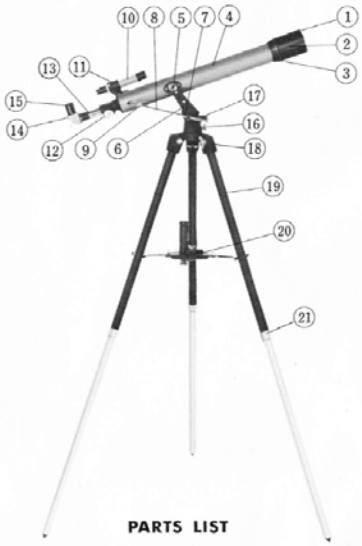
SWIFT INSTRUMENTS, INC.

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MODEL NO. 860



PARTS LIST

1) Dust Cap
2) Dew Cap
3) Objective Lens
4) Main Tube
5) Mounting Knob.
6) Yoke Mount
7) Altitude Control Screw
8) Altitude Control Rod.
9) Altitude Control Fine Focussing Ring
10) Viewfinder, (5×24)
11) Viewfinder Collimating Screw.
12) Focussing Handle.
13) Draw Tube.
14) Diagonal Prism.
15) Eyepiece.
16) Azimuth Control Screw
17) Azimuth Control Fine-focussing knob.
18) Mount Base.
19) Tripod.
20) Accessory Tray.
21) Tripod Length Control Chuck.

Aerolite Astronomical Telescope Instructions

ASSEMBLING

The field of view of an astronomical telescope is rather small under the very high magnification used to observe distant celestial objects. Only a slight turn of the telescope will put the viewed object out of sight. Therefore, it is extremely important to correctly assemble your telescope so that it is steady and secure. Open the box, take off the styrofoam lid and note the position of all components. When storing the telescope, return all parts and accessories to their correct position in the styrofoam insert.

ASSEMBLING ALTAZIMUTH TELESCOPE MODEL NO.860

Remove the tripod legs from the case and adjust them to the same length. Tighten the chuck to secure the legs. Attach the legs to the mount and tighten by means of the long bolts. Open the tripod legs and set up the tripod. The triangular accessory tray is to be attached to the tripod by the small wing nuts and bolts provided. Attach the main telescope to the mount and tighten the mounting knob of the pivots. Attach the altitude fine-adjustment rod. Align the view finder and you are ready for observation.

SELECTION OF EYEPIECE

It is not always true that higher power gives better observation results. The best result is usually obtained by using lower power eyepieces. Remember that the highest effective magnification of the telescope is limited by the diameter of its objective lens and generally the telescope with the larger objective lens has a higher limit of effective magnification. Three eyepieces are supplied with your AEROLITE telescope: SR4mm, HM6mm and H20mm. Magnification of the telescope is obtained by dividing the focal length of the objective by the focal length of the eyepiece in use. When the focal length is 910mm, magnification of 45X is obtained with the H20mm eyepiece. If the SR4mm eyepiece is used, magnification becomes about 228X. H20mm should be used when observing star clusters, nebulae, variable stars, comets, artificial satellites, etc.

hich require a wider field of view. On the other hand, SR4mm is used to ob-
rve the surfaces of planets, double stars, etc. which require the highest effec-
/e magnification. However, the high magnification would not be expected to
ve good results when SEEING CONDITIONS or atmospheric conditions ARE
OOR. In such cases, substitute eyepiece HM6mm.

OCUSING

If the observer is not familiar with the higher power telescopes it would
: advisable to practice focusing the telescope by using the lower power eye-
eces during the daytime. Insert the eyepiece into the star diagonal prism which
turn is inserted into the draw tube. While sighting through the eyepiece
owly turn the pinion handle until the distant object is seen in focus.

THER HINTS FOR OBSERVATION

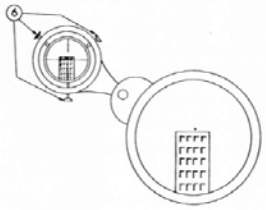
Use the telescope outdoors. Window glass and air currents in a heated room will impair the clarity of an image. Equalize the internal temperature of the telescope with the outside temperature by placing the telescope outdoors for a period of time before making observations; this is especially so during the cold season.

Astronomical telescopes usually give an inverted and reversed image, thus star maps must be followed as if they were inverted.

The view finder is used to locate the general area of the object. To view, start with the lowest power eyepiece and work up to the higher power eyepiece with its very limited field of view.

ESOLVING POWER

The most important part of the telescope is the objective lens whose quality ainly determines the quality of a telescope. Look at double stars to measure e efficiency of the telescope and your proficiency in handling it. The ef-iency of the telescope is measured by the angular distance (degrees) between o stars which the telescope may distinguish as separate images. This efficiency called Resolving Power.



VIEW FINDER

The view finder is a small, low power, wide field telescope which aids in locating objects to be viewed with the main telescope. It is focused by turning its eyepiece to the right or left. The view finder eyepiece has a built-in crosshair permitting an object to be centered in the field of view. Before the view finder is used, it is necessary to carefully align its optical axis to the main telescope. In daylight select a well-defined distant object such as a chimney or mountain top and, using the H20mm eyepiece, center the object in the field of view of the telescope. By using the collimating screws in the view finder mounting brackets, adjust the view finder until the object is centered in the crosshair. The optical axis is now very near to parallel but to improve it, repeat the same procedure at night by selecting a well-defined celestial object.

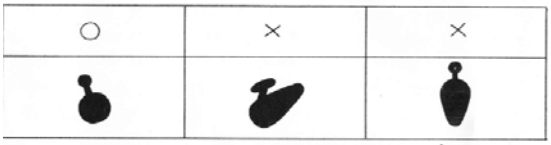
DIAGONAL PRISM

The diagonal prism is a special eyepiece holder which permits comfortable viewing when observing stars around the Zenith (the highest point); it is also called a Zenith prism and is an indispensable accessory for the astronomical telescope. An object viewed through the diagonal prism will appear upright but reversed.

SUN GLASS

A sun glass absorbs some of the sun's heat and light. Extreme care must be employed in its use. At the high magnification of the astronomical telescope, the sun's heat is so concentrated on the eyepiece that it could crack the sun

glass should the telescope be pointed at the sun for more than a short time. When viewing, turn the telescope away from the sun at frequent intervals. Always cover the objective lens with the dust cover when the telescope is not in use. IF THIS PRECAUTION IS NEGLECTED, SERIOUS DAMAGE TO THE EYE CAN OCCUR. Also, when viewing the sun, cover the view finder to prevent exposure of the naked eye to the sun's rays passing through the view finder. It is rather difficult to locate the sun with the sun glass due to the dark field of view. Therefore, we recommend that the sun be located by watching the external shadow of the telescope, moving the telescope until the shadow of the telescope becomes a round dot.



MOON GLASS

There is a great deal of reflected glare when the full moon is observed. Utilizing the moon filter will reduce this glare so that sharpened details can be viewed.

BARLOW LENS

This lens will automatically double the power of any eyepiece. The lens is inserted into the eyepiece adapter and the eyepiece is inserted into the other end. In keeping with the doubled power, the field of view and relative brightness will be greatly reduced.

CARE OF THE INSTRUMENT

Your telescope has been constructed with the finest of materials and workmanship. With proper care it will give a lifetime of service. It is a precision instrument and should be handled accordingly. When not in use the telescope and all accessories should be stored in the box and protected by the styrofoam insert.

The objective lens has been coated with a thin film of Magnesium Fluoride for maximum viewing brilliance. Incorrect cleaning of the lens will ruin this delicate optical surface. Do not rub or polish lens; gently remove dust particles with a camel's hair brush or lens tissue. Frequent cleaning should be avoided. The objective lens has been assembled at the factory by optical experts and should never be disassembled. The dust cap should be kept on the hood except when you are actually viewing. Occasional oiling of moving parts may be desirable but parts should be free from dust before applying oil. Avoid disassembling your telescope into small parts because without proper experience it is difficult to reassemble the instrument exactly to its original condition. Should it be necessary to disassemble, we recommend that each part be marked with its connecting part to aid in reassembly.