OPTICA

4 IN. NEWTONIAN REFLECTORS

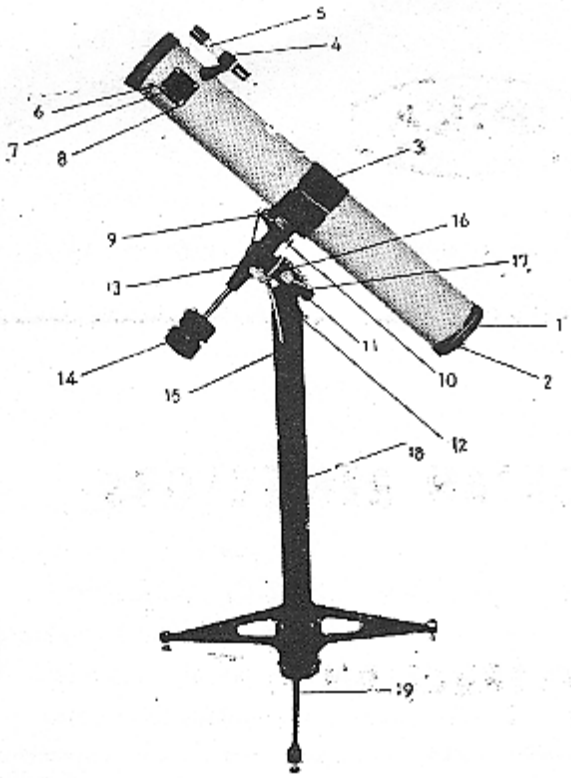
INSTRUCTION

STOCK NUMBER

LA-100

OPTICA b/c, 4100 MacARTHUR BLVD., OAKLAND, CALIFORNIA 94619, U.S.A.

TELESCOPE PARTS



1. Mounting cell
2. Adjusting screw for main mirror
3. Hinged sleeve type telescope tube holder (Trunnion) with thumb screw
4. Adjusting screw for finder scope
5. Finder scope
6. Adjusting screw for diagonal mirror
7. Eyepiece
8. Micro focusing knob with pinion
9. Right ascension slow motion control
10. Declination axis inclination clamp lever
11. Polar axis
12. Azimuth clamp lever
13. Declination axis
14. Balance weight or counterpoise
15. Declination slow motion control
16. Clamp lever for fixing telescope to the polar axis
17. Polar axis inclination clamp
18. Iron pillar
19. Tripod base

Optical Specifications

Main mirror (Aluminized & Siliconized)

Mirror clear aperture :	100 mm (4 in.)
Focal length :	1000 mm
Light gathering power for naked eye :	204×
Resolving power with respect to double stars -	1.2"
Faintest discernible star :	11.8 m
Magnifications :	167×, 80×, 40×
Finder scope :	5×25 mm 7°

Accessories

3 Eyepieces (HM 6 mm, HM 12.5 mm, HM 25 mm) Dust cap with sun stopper.

How to assemble

1. Set screw with the bolts, pillar and tripod base.
2. Attach equatorial mounting to the pillar and screw in clamp (No. 12)
3. Mount the main tube to the tube holder (Trunnion).
   Position of tube must be so adjusted as to obtain equilibrium to Declination center.
4. Screw in Balance weight to the Declination axis.
5. Attach the flexible cables.

CHECKING OF OPTICAL AXIS

Before using your telescope, check correct positioning of main mirror and diagonal mirror (inside body tube). The optical axis of these mirror and eyepiece should always be in aligment for correct observation. Since all telescopes are properly adjusted prior to leaving the factory, unnecessary readjustment should be avoided. However, should readjustment become necessary due to shock or otherwise during shipment, the following procedure should be adjusted the optical axis. Remove eyepiece from the draw tube and look into diagonal mirror is seen and on mirror, You will see diagonal mirror on which main mirror is seen and on main mirror, diagonal mirror with the eye of observer is seen. Adjust diagonal mirror by the adjusting screw to allow the image on main mirror to come into the center of draw tube. Adjust main mirror by the adjusting screws to allow image of diagonal mirror to center on main mirror.

ASTRONOMICAL OBSERVATION

Adjust Polar axis to the direction of North Pole and then the angle of Polar axis approximately to the latitude of the place where observation is being made. The angle between horizontal plane and the Polar axis should be the degrees of latitude from the place where the observation is made. As a further check, the balance weight rod should be pointing at the North Star. After this completed, screw up clamps 12, 16 and 17.

Direct telescope tube toward the direction of the object to be observed. To locate object quickly, use finder (5) instead of looking into the eyepiece. Optical axis of the finder is common with that of main mirror; the object viewed through the finder is within the view of the telescope.

Place eyepiece into eyepiece mount. Use HM 25 mm (40 X) first. For focusing, bring the draw-tube back and forth by means of focusing knob (8).

The object, once in view through HM 25 mm, can easily be observed through HM 12.5 mm (80 X). Simply replace the eyepiece. As the mounting is Equatorial style, once the object is in view, observation of its diurnal (daily) motion is possible.

USE OF FINDER SCOPE

Optical axis of the finder is common with that of main mirror. The object viewed through the finder is within the view of the telescope. If the object seen through the finder is not exactly the same as seen through the eyepiece, the finder should be adjusted by turning finder adjusting screw.

FOCUSING

Focusing is obtained by forward and backward movement of draw tube by the focusing knob.

HINTS FOR MORE EFFICIENT OPERATION

Telescope should be placed on a solid base. The slightest movement will disturb the image. About an hour before using, place the telescope outdoors so that its temperature will be the same as atmospheric temperature. In cold weather, the curve of the surface of mirror and lens is apt to change, which makes observation difficult. Under these conditions fan out the air inside the telescope tube.

When observing the sun, be sure the sun filter is attached to the objective lens. UNDER NO CIRCUMSTANCES should the viewfinder be used as the intense light transmitted through it from the sun might injure the pupil of the eye. Instead, point the telescope toward the sun watching the shadow it casts on the ground behind the telescope. When it is accurately focused on the sun, the shadow will appear perfectly round. When outdoor humidity is high, eyepiece and mirror may fog. Under these circumstances, place the telescope indoors for about half an hour until the moisture is dissipated.

While not in use, cover the unit with vinyl film or a sheet of cloth to protect it from dust.

Do not touch mirror and lens with bare hand or fingers. Damage to the lens coating may result.

SUN GLASS

DO NOT LOOK DIRECT AT THE SUN WITHOUT USING THE SUN GLASS.

OPTICA