



APPENDIX A: EQUATORIAL WEDGE

There are two equatorial wedges used on Meade LX200 telescopes. Please read the section, below, that applies to your telescope.

[toc] 1. 8" Equatorial Wedge (For 7" and 8" LX200)

The Equatorial Wedge permits use of the 8" LX200 telescope in an astronomical, or "equatorial," mode. The wedge fits onto the field tripod, described below, and accepts the base of the 7" or 8" LX200 fork mount. See Fig. 8.

NOTE: The Meade equatorial wedge is designed solely for use in conjunction with the Meade field tripod. The wedge should never be used without the field tripod, e.g. by placing the wedge alone on a table top and then mounting the telescope on the wedge. The 7" or 8" LX200, placed onto the equatorial wedge alone without the field tripod attached to the wedge may become seriously imbalanced, to the point where the telescope may actually tip over.

The equatorial wedge for the 7" and 8" LX200 telescope is of modern design, with several important features incorporated to simplify and facilitate telescope operation. After using the wedge, you will find that the functional design features included are of very significant value in routine telescope operations. Features included are:

1. Attachment of the wedge to the field tripod by means of only one manual knob.
2. Quick azimuth adjustment by loosening the manual knob as described above.
3. Bubble level for rapid tripod/wedge leveling.
4. Etched latitude scale for fast adjustment of the latitude angle.



IMPORTANT NOTICE!
Never use a telescope or spotting scope to look at the Sun!

Observing the Sun, even for the shortest fraction of a second, will cause irreversible damage to your eye as well as physical damage to the telescope or spotting scope itself.



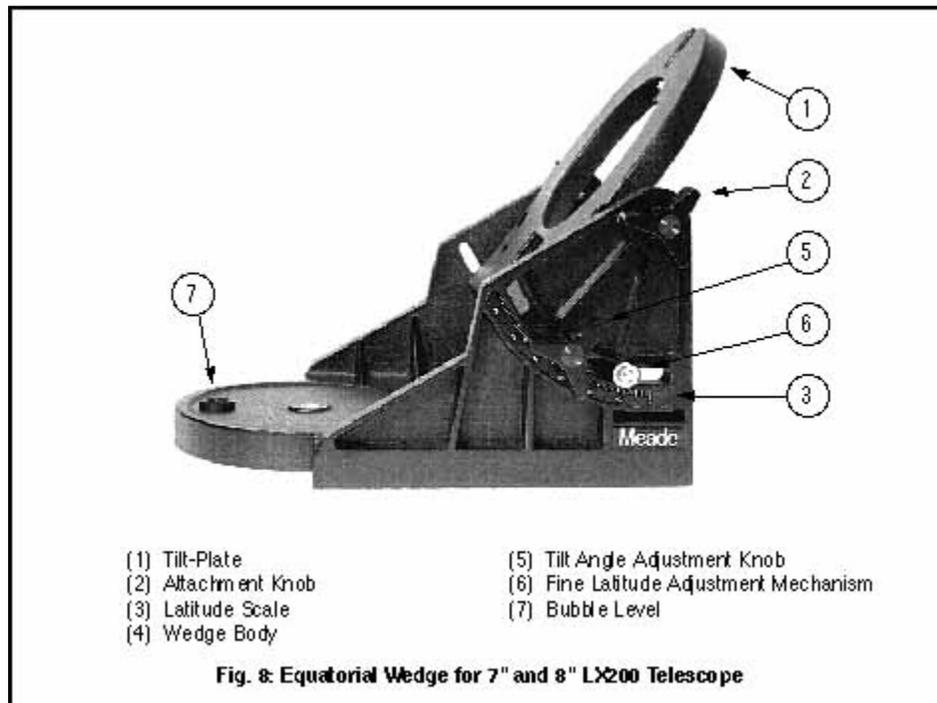


Figure 8: Equatorial Wedge for 7" and 8" LX200 Telescope

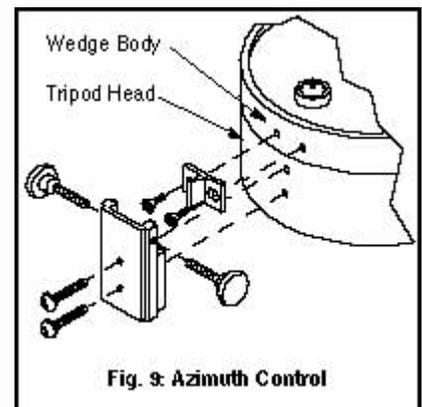
To assemble the equatorial wedge, follow this procedure (note that all required wedge hardware and manual knobs are shipped within the wedge carton):

1. The wedge consists of two basic parts: the wedge body and the tilt-plate, as shown in Fig. 8. Attach the tilt-plate to the wedge body by threading in the four knobs provided. Two knobs, with washers, should be used on each side of the wedge body so that a total of 4 knobs attach the tilt plate to the wedge body.
2. Place the wedge onto the field tripod with the central threaded rod of the tripod fitting through the center hole in the floor of the wedge. Thread the 2-1/2" diameter manual knob onto the threaded rod of the tripod and firmly tighten the manual knob.

[toc] a. Azimuth Control

The Azimuth Control for the Meade Equatorial Wedge and Field Tripod is shipped in a plastic bag and includes the following parts:

1. Azimuth Base (large U shaped piece of aluminum)
2. Azimuth Arm (small T shaped piece of aluminum)
3. 2 - Azimuth Knobs
4. 2 - 8-32 x 1/2" flat-head machine screws
5. 2 - 8-32 x 1" round-head machine screws



To attach the Azimuth Control to your wedge and tripod, follow these steps:

1. Remove the 4 set screws from the wedge and field tripod (which plug the attachment holes) using a screwdriver.
2. Attach the Azimuth Arm to the Equatorial Wedge using the 2 ea. 8-32 x 1/2" flat-head machine screws.
3. Attach the Azimuth Base to the Field Tripod using the 2 ea. 8-32 x 1" round-head machine screws.
4. Thread the two Azimuth Adjustment Knobs into the Azimuth Base, until they just touch the Azimuth Arm.

3. Attach the Azimuth Base to the Field Tripod using the 2 ea. 8-32 x 1" round-head machine screws.
4. Thread the two Azimuth Adjustment Knobs into the Azimuth Base, until they just touch the Azimuth Arm.

The Azimuth control is now ready to use. To adjust in Azimuth, loosen the 3" central wedge knob. Rotate the wedge by using the two Azimuth knobs in a push-pull manner. After positioning the wedge, tighten the central wedge knob.

[toc] b. Deluxe Latitude Adjuster

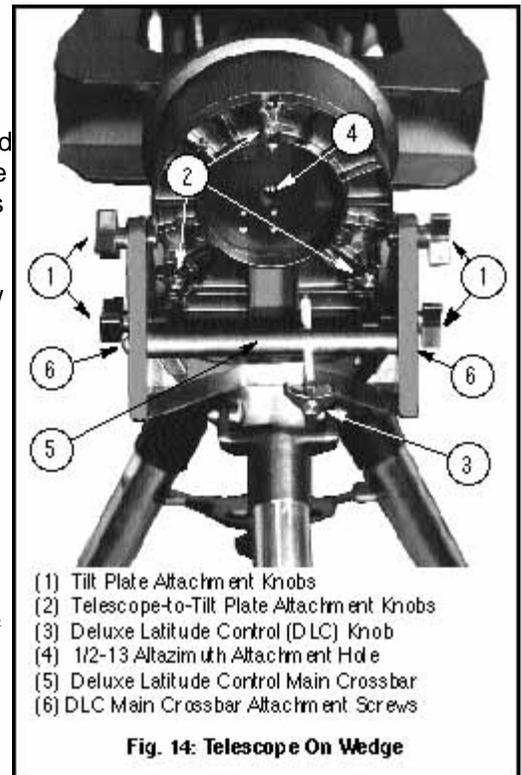
The Deluxe Latitude Adjuster (DLA) attaches directly to the Equatorial Wedge and permits very precise adjustments in latitude angle by the simple turning of one knob.

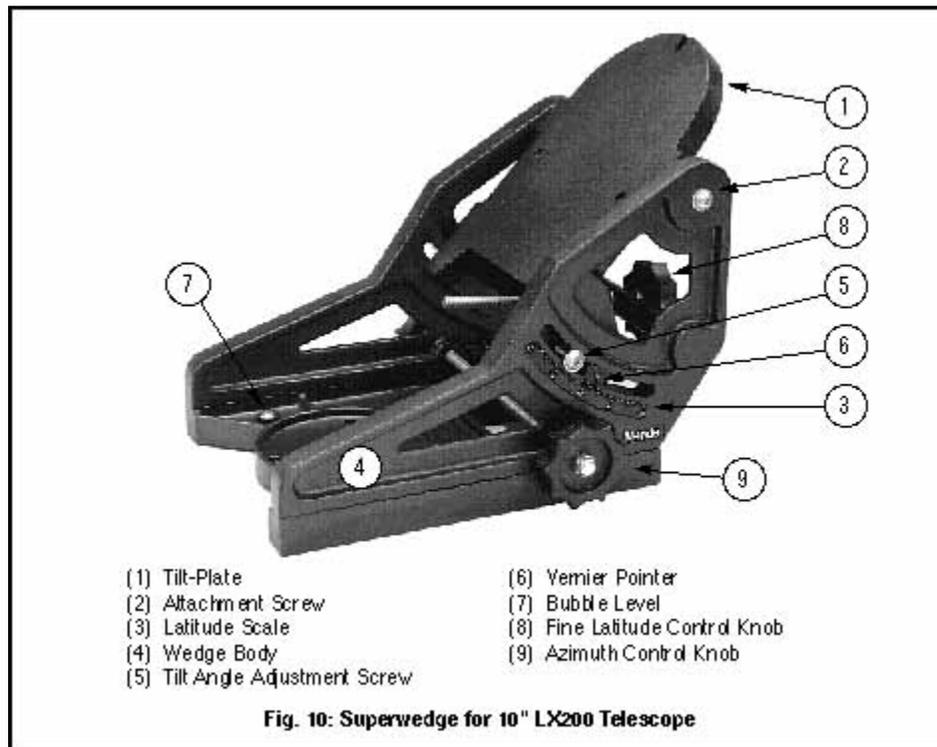
The Equatorial Wedge for Meade 7" or 8" Schmidt-Cassegrain telescope is shipped with the main crossbar of the DLA already installed. Loosen the two socket-head screws that lock the main crossbar in place, to allow the crossbar to rotate slightly if needed. Thread the long adjustment knob (3, Fig. 14) into the main crossbar and position the end of the adjustment knob into the cavity on the underside of the Equatorial Wedge Tilt-Plate. Tighten the two socket-head screws locking the main crossbar into place.

The DLA is now ready to use. To make fine latitude adjustments, follow this procedure:

1. Slightly loosen the knobs (5, Fig. 8), on each side of the wedge.
2. Turn the DLA's adjustment knob (pressing against the bottom of the tilt-plate), so that the tilt-plate moves in latitude angle.
3. Re-tighten the two knobs, which were loosened in step 1, above.

NOTE: When installing the tilt-plate to the wedge, note that it is a tight fit and the sides must generally spread slightly to accept the tilt-plate. If the main crossbar of the DLA is already tightened into place this will inhibit your installation of the tilt-plate. You will therefore see that by releasing the screws on the ends of the DLA crossbar your installation of the wedge tilt-plate will be facilitated.





[toc] 2. SUPERWEDGE (For 10" and 12" LX200)

The Superwedge permits use of the 10" and 12" LX200 telescope in an astronomical, or "equatorial," mode. The wedge fits onto the field tripod, described below, and accepts the base of the 10" and 12" LX200 fork mount. See Fig. 10.

NOTE: The Meade Superwedge is designed solely for use in conjunction with the Meade field tripod. The Superwedge should never be used without the field tripod, e.g. by placing the Superwedge alone on a table top and then mounting the telescope on the wedge. The 10" and 12" LX200, placed onto the Superwedge alone without the field tripod attached to the wedge may become seriously imbalanced, to the point where the telescope may actually tip over.

The Superwedge for the 10" and 12" LX200 telescope is of modern design, with several important features incorporated to simplify and facilitate telescope operation. After using the Superwedge for your telescope, you will find that the functional design features included are of very significant value in routine telescope operations. Some of these features include:

1. Attachment of the Superwedge to the field tripod by means of only one manual knob. (For photographic applications with the telescope where extreme steadiness is required, 3 additional hex-head screws are provided).
2. Quick Azimuth adjustment by loosening the manual knob as described above.
3. Bubble level for rapid tripod/wedge leveling.
4. Etched latitude scale for fast adjustment of the latitude angle.
5. Built-in latitude adjustment control.

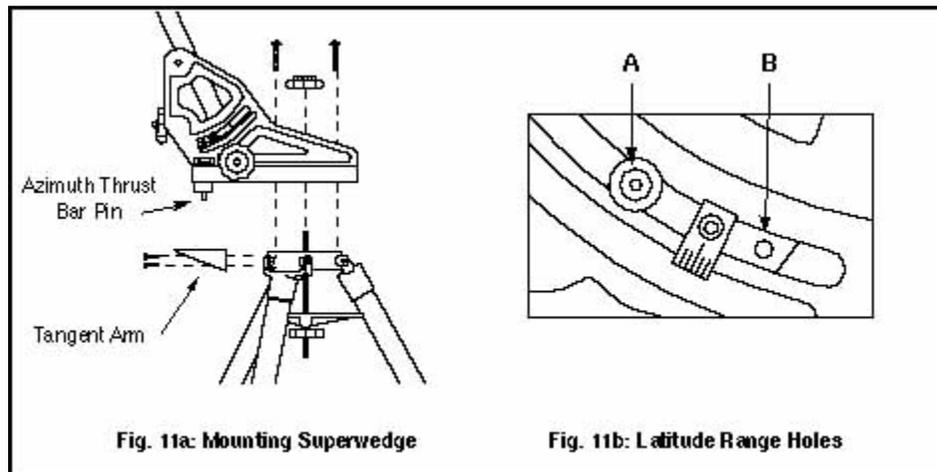


Figure 11a: Mounting Superwedge, Figure 11b: Latitude Range Holes

To assemble the Superwedge, follow this procedure (note that all required wedge hardware and manual knobs are shipped within the wedge carton):

1. Locate the two 8-32 nylon set screws on the rim of the tripod head and remove them. Attach the tangent arm to the tripod using the supplied 8-32 X 1/2" socket cap screws. (See Fig. 11a.)
 2. Push the field tripod threaded rod up so that the threaded rod extends above the top of the tripod head.
 3. Holding the threaded rod in position, place the Superwedge on top of the tripod head so that the threaded stud extending from the tripod head passes through the center hole on the wedge floor. Make sure the pin extending from the bottom of the azimuth thrust bar is positioned in the slot on the tangent arm (see Fig. 11a).
 4. Install the large hand knob/compass onto the threaded stud. Pass the three 5/16-18 X 1-1/4" button head screws through the clearance slots on the wedge floor and thread them into the tripod head.
 5. The lower tilt plate locking screws (see "A", Fig. 11b) are installed in the factory to allow the tilt plate to be adjusted for any latitude greater than 25 degrees and less than 55 degrees. If viewing in a region with a latitude greater than 55 degrees, move the locking bolts to the lower mounting holes (see "B", Fig. 11b).
- [toc] 3. Mounting the Telescope On the Wedge (7", 8", 10", and 12" LX200 Models)

With 7" or 8" LX200 telescopes, three knobs are supplied for mounting the telescope's drive base to the tilt-plate of the equatorial wedge. With the 10" and 12" LX200, three socket screws are provided for this purpose.

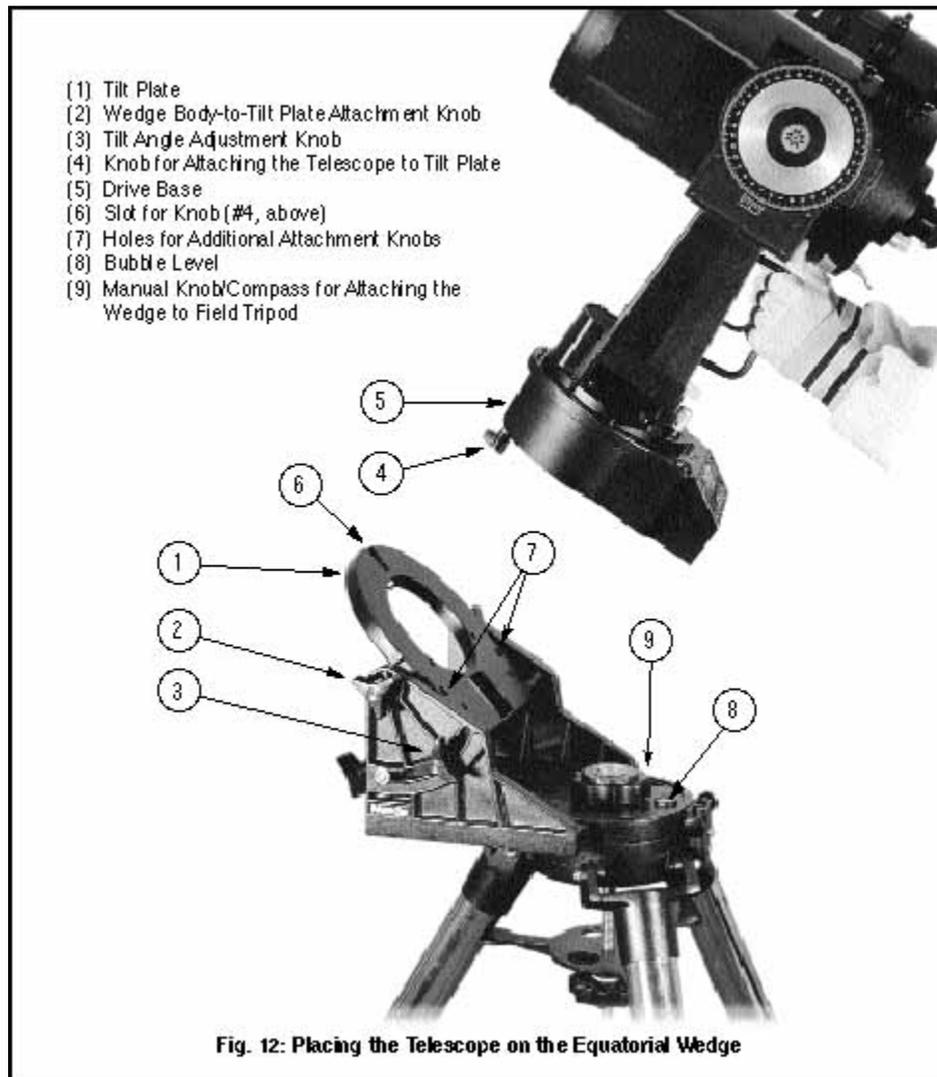
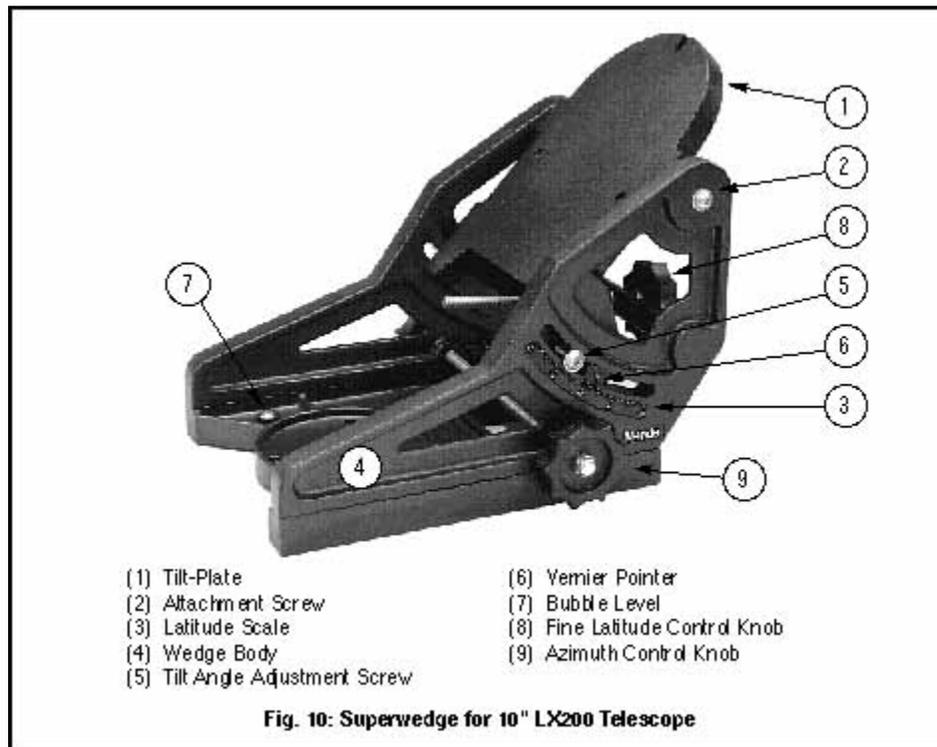


Fig. 12: Placing the Telescope on the Equatorial Wedge

Thread one of these knobs (or screws, as appropriate) partially into the hole on the underside of the drive base, located at the curved-end of the drive base. See 4, Fig. 12. This knob or screw should be threaded in about 3 full turns, not fully threaded into the hole.



Check that the knobs or bolts at the side of the wedge, (5, Fig. 8 or 5, Fig. 10), are firmly tightened before placing the telescope onto the wedge.

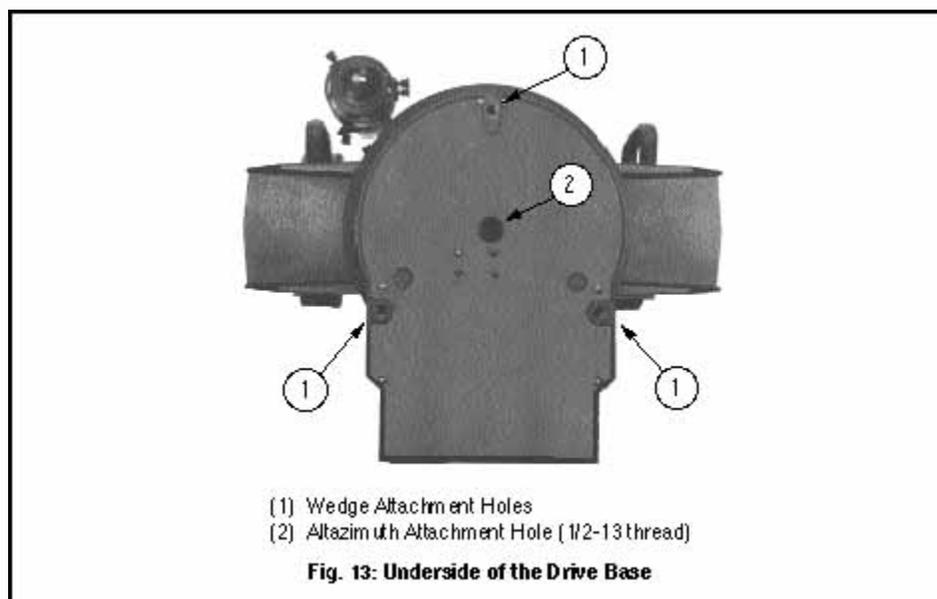


Figure 13: Underside of the Drive Base

Grasping the 2 fork arms of the telescope firmly, with the power panel towards you, place the telescope onto the tilt plate of the wedge by sliding the knob (7" and 8" LX200) or screw (10" and 12" LX200) into the slot at the top of the curved-end of the wedge tilt-plate.

Insert the 2 remaining knobs for the 7" and 8" LX200, or socket screws for the 10" and 12" LX200, through the

Insert the 2 remaining knobs for the 7" and 8" LX200, or socket screws for the 10" and 12" LX200, through the underside of the tilt plate and into the underside of the drive base. Tighten down all 3 knobs or screws to a firm feel. Extreme force is not necessary in this regard.

The telescope is now fully mounted onto the wedge and field tripod. Adjustments in wedge latitude angle and/or azimuth orientation may be made with the telescope in place. Further details on telescope polar alignment see Appendix B: Equatorial Use.

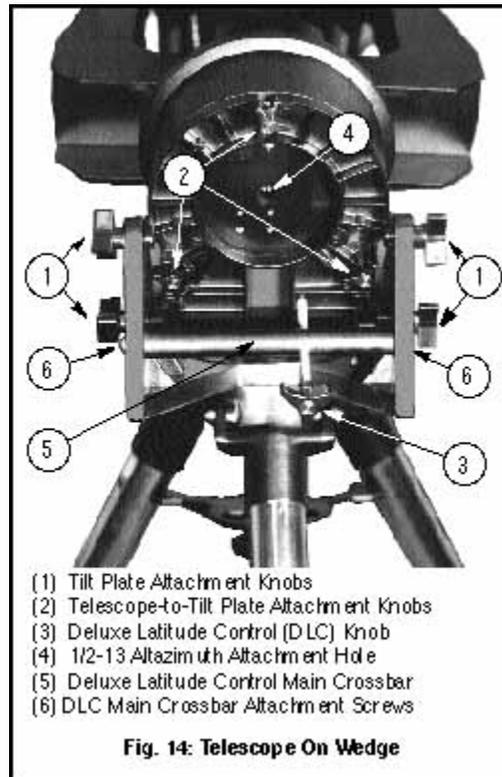


Figure 14: Telescope on Wedge

[toc] 4. Magnetic Compass (for 7", 8" Equatorial Wedge and 10", 12" Superwedge)

The magnetic compass helps the observer to set-up the telescope without actually seeing the pole star Polaris. This allows setting up before dark or in locations where the view of Polaris is obstructed. The magnetic compass has an adjustment to compensate for the local angle of Magnetic Declination. Note: Magnetic Declination is the difference between Magnetic North (which the compass shows) and true north (where the telescope should be pointed). Magnetic Declination should not be confused with the astronomical term "Declination," which, when used with "Right Ascension," describes the celestial coordinate system.

[toc] a. Setting Magnetic Declination

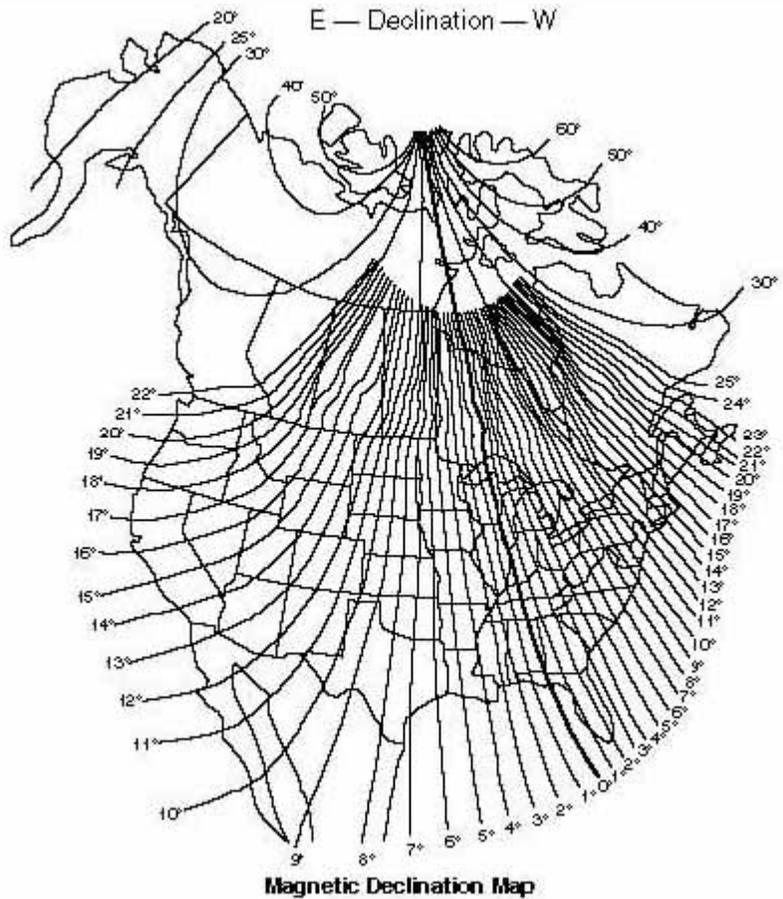
In order to obtain an accurate reading using the compass, you must first adjust for the Magnetic Declination for your location.

1. First, determine the Magnetic Declination in your area using the Isogonic Chart (Fig. 15)

2. Squeeze the clear central vial with thumb and index finger of the left hand.

3. With the right hand, rotate the outer dial until the orienting arrow (the black arrow painted on the inside clear surface) is lined up with the desired Magnetic Declination angle on the declination scale. Notice that East Magnetic Declination is to the right of the "North" position and West Magnetic Declination is left of the "North" position. As an example, Fig. 16. shows the correct setting for 16 degrees West Declination, which covers Providence, Rhode Island.

The Magnetic Compass is now set for the correct declination angle. To attach to the Equatorial Wedge, follow these steps:



Magnetic Declination Map

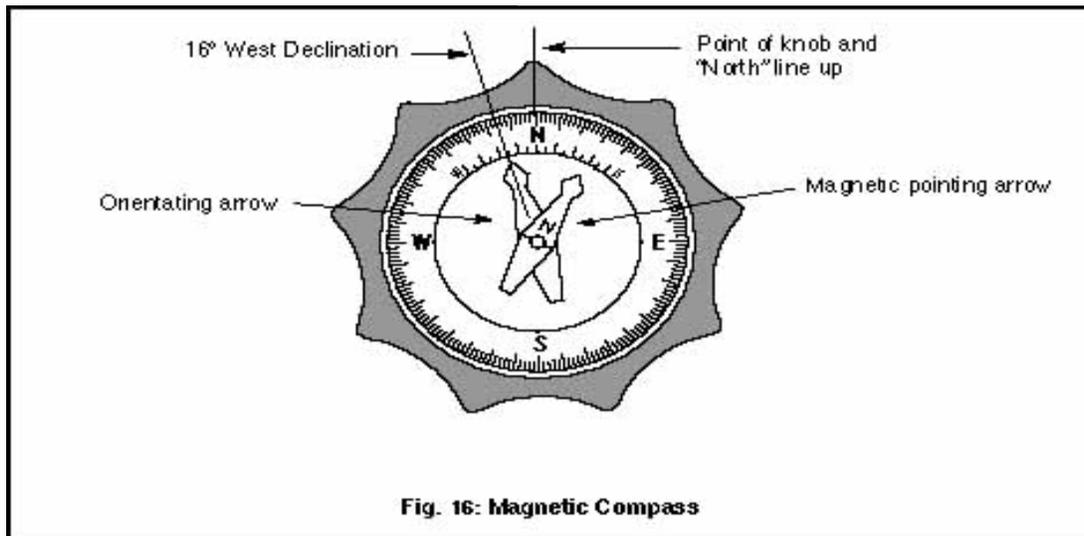


Fig. 16: Magnetic Compass

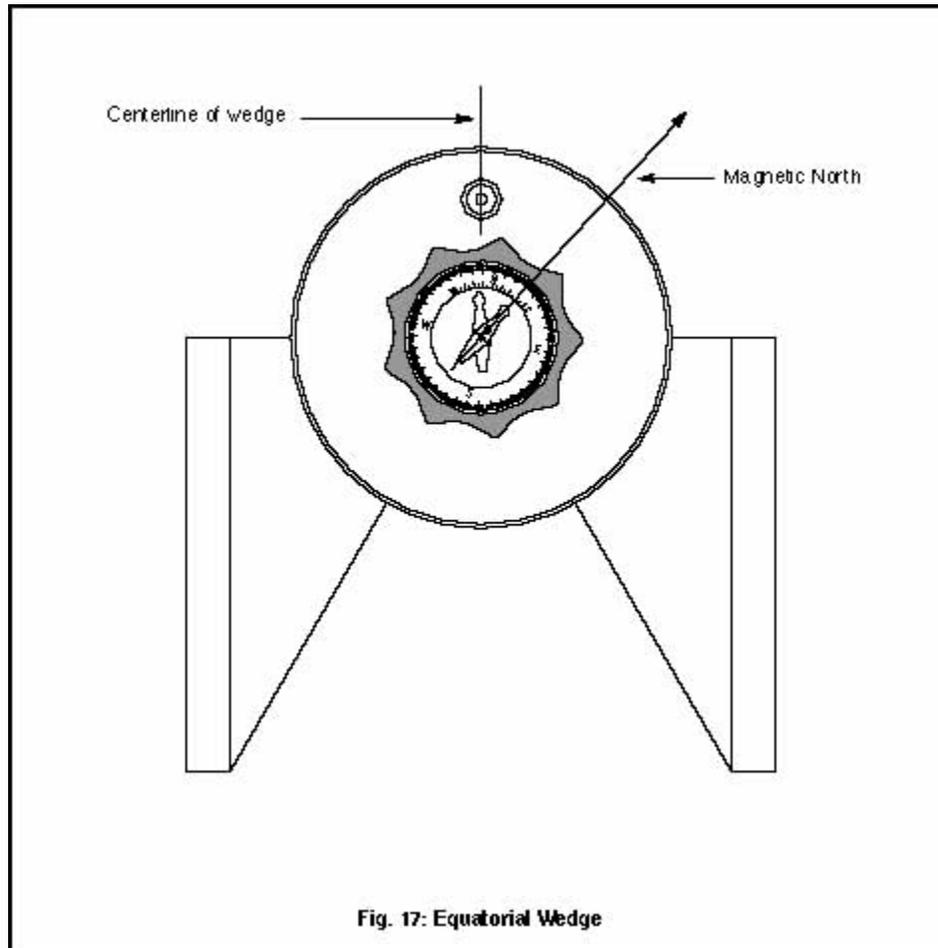
1. Snap the Magnetic Compass into the 3" diameter wedge attachment knob (after setting the Magnetic Declination as described above). Position the compass into the knob so that the 360 degree location on the direction scale (the "North" position) lines up with one of the nine points of the knobs. (See Fig. 16.) Press the compass firmly into the knob.

2. Assemble the Equatorial Wedge onto the Field Tripod as described in the Instruction Manual using the

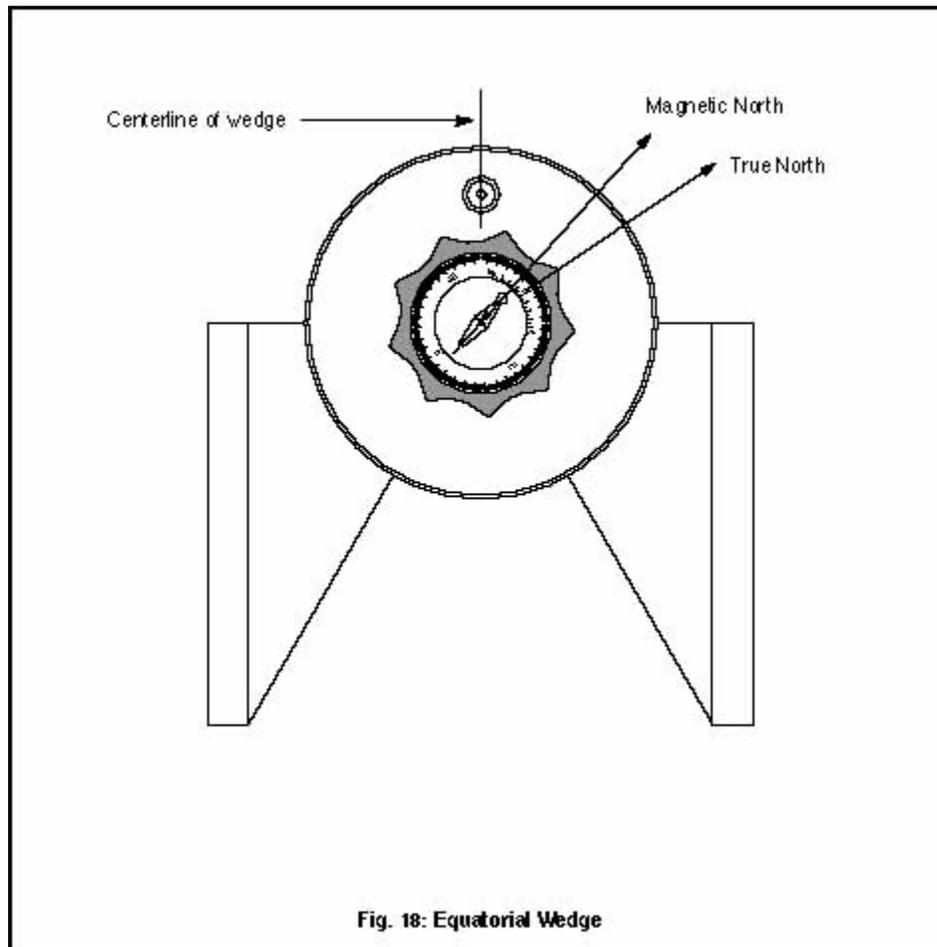
2. Assemble the Equatorial Wedge onto the Field Tripod as described in the Instruction Manual using the knob/compass combination to attach the wedge to the tripod.

[toc] c. Finding True North

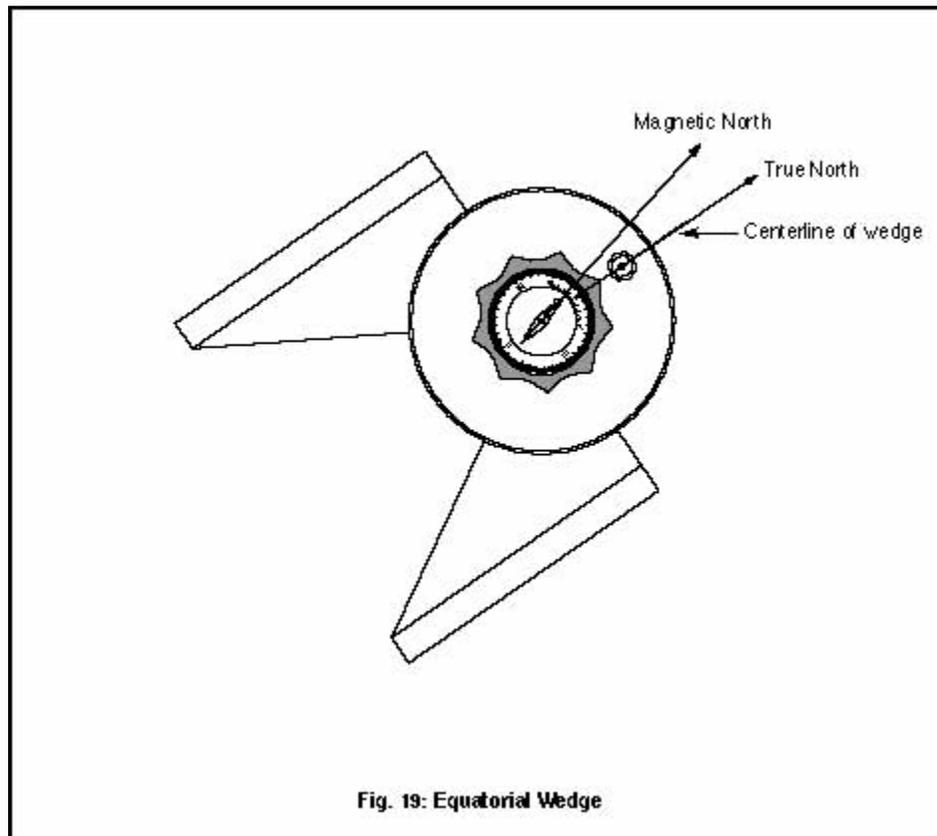
The Magnetic Compass is now ready to use. Just follow these simple steps for a quick and easy azimuth alignment:



1. Loosen the knob/compass slightly. This allows for rotation of the Equatorial Wedge under the knob/compass (Fig. 17). The magnetic pointing arrow will point to magnetic north.



2. Rotate the knob/compass so that the magnetic pointing arrow lies directly over the painted black alignment arrow (painted on the bottom surface of the compass, Fig. 18). The "North" position on the direction scale (and the point on the knob/compass) now point directly north.



3. Rotate the Equatorial Wedge in azimuth (without moving the knob/compass) until the centerline of the wedge lines up with the point of the knob/compass (Fig. 19). The centerline of the Equatorial Wedge now falls directly on the true north line.

4. Tighten the knob/compass, locking the Equatorial Wedge into place. The Field Tripod and Equatorial Wedge are now pointed directly toward celestial north, without ever having seen the North Star.