

Operating Instructions

#883 Deluxe Field Tripod

For use with the ETX-90RA, ETX-90EC, and ETX-125EC Astro Telescopes

PARTS LISTING AND ASSEMBLY

When opening the packing box for the first time, note carefully the following parts included with the full-length #883 Deluxe Field Tripod:

- Tripod
- 2 Attachment Knobs (with 1/4-20 threads)
- Accessory Tray

Preparing the Tripod For Use

The #883 Deluxe Field Tripod (Fig. 1) is simple to set up and easy to use. Users need only attach the accessory tray and adjust the tripod to the desired observing height.

1. Extending the Tripod

Remove the tripod from the packing box and stand it upright. Grasp two of the tripod legs, leaving the full weight of the tripod on the third leg. Gently pull the legs apart to a full open position.

2. Attaching the Accessory Tray

Remove the round accessory tray (7, Fig. 1) from the packing box. Remove the black, star-shaped lock knob from the threaded rod on the bottom of the accessory tray. Attach the tray to the tripod by inserting the threaded rod through the central hub of the extension strut (8, Fig. 1). Rethread the lock knob onto the accessory tray.

3. Varying the Tripod Height

Loosen the black, star-shaped height adjustment knob (6, Fig. 1) at the base of each tripod leg. Slide the three inner tripod leg sections to the desired height. Tighten the three height adjustment knobs to a "firm feel." Do not overtighten.

NOTE: The tripod legs do not all have to be extended to exactly the same length. Vary the height of one or more tripod legs as required to achieve an approximately level mounting surface for the telescope, as shown by the bubble level (5, Fig. 1).

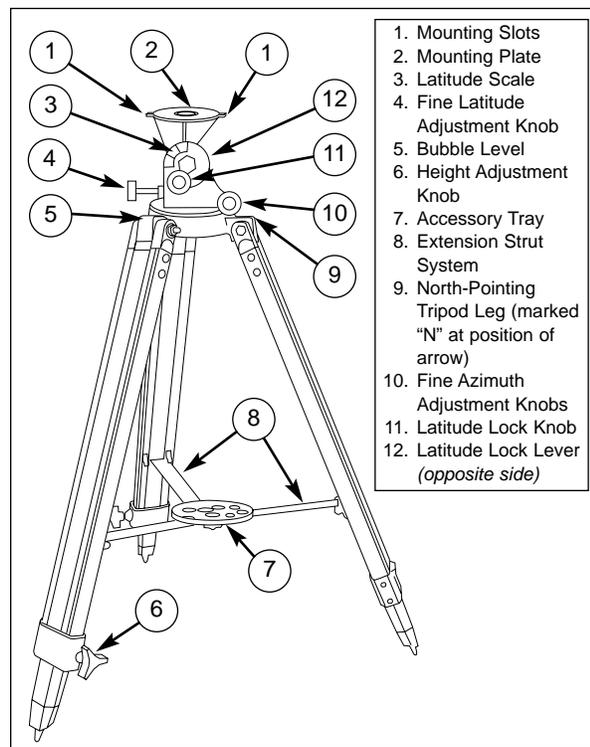


Fig. 1: #883 Deluxe Field Tripod.

4. Collapsing the Tripod for Storage

Remove the accessory tray (7, Fig. 1) from the tripod. Grasp the top of the tripod with one hand, and with the other hand, pull up on the central hub of the extension strut (8, Fig. 1) where the accessory tray was attached. This action will cause the tripod legs to move inward to a collapsed position.

Important Note: If the tripod does not extend or collapse easily, do not force the tripod legs in or out. By following the above instructions the tripod will function properly. Forcing the tripod into an incorrect position may damage the extension strut system.

Attaching an ETX Astro Telescope to the Tripod

1. Confirm that the latitude lock lever (12, Fig. 1) is in the locked position by rotating the lever clockwise until tight. If using the ETX-90RA model, confirm that the N/S switch on the bottom of the drive base of the telescope is set for the correct hemisphere prior to mounting.
2. On the side of the telescope drive base, locate the two table tripod attachment hole covers (Fig. 2).



Fig. 2: Drive Base of the ETX-90RA showing attachment holes covers standard on all ETX telescopes.

3. Locate the field tripod mounting hole on the bottom of the drive base that is closest to the hole covers located in step 3. Slightly thread one of the provided 1/4-20 attachment knobs into the hole.
4. Place the telescope base on the tripod mounting plate (2, Fig. 1), aligning the knob inserted in step 3 with the mounting slot (1, Fig. 1) located directly above the "N" tripod leg (8, Fig. 1). Slide the knob into the slot, then position the telescope base so that the second field tripod mounting hole lines up with the second mounting slot.
5. Thread the second 1/4-20 knob through the slot and into the hole in the telescope drive base. Tighten both knobs to a firm feel only to secure the telescope to the tripod. **Do not overtighten or damage to the threads may occur.**

The #883 Deluxe Field Tripod provides for two alignment configurations of ETX Astro Telescope models: Alt/Az and polar.

ALT/AZ ALIGNMENT

Alt/Az alignment (Fig. 3) is best used for terrestrial (land) viewing and for casual celestial observation. The telescope's manual slow-motion controls (ETX-90RA) or the Electronic Manual Controller arrow keys (ETX-90EC and ETX-125EC) are used to keep the object within the field of view.

NOTE: Fully automatic tracking of celestial objects can be accomplished in the Alt/Az configuration using the optional #497 Autostar Computer Controller with the ETX-90EC and ETX-125EC. The ETX-90RA must be polar-aligned to automatically track celestial objects (see **POLAR ALIGNMENT**).

In Alt/Az viewing applications, the three legs of the #883 Deluxe Field Tripod may be positioned in an arbitrary orientation. The telescope mounting, however, should be placed in a horizontal position by turning the fine latitude adjustment knob (4, Fig. 1) until the latitude scale (3, Fig. 1) reads 90°, unlocking and re-locking the latitude lock knob (11, Fig. 1) to accomplish this adjustment.

NOTE: The ETX-90RA motor drive should be turned off in terrestrial applications.

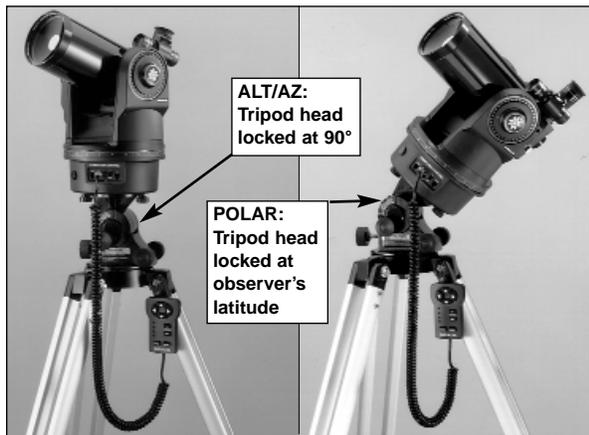


Fig. 3: Examples of Alt/Az (left) and polar mounting (right) of an ETX-90EC to the #883 Deluxe Field Tripod.

POLAR ALIGNMENT

Polar alignment (Fig. 3) is the process of lining up the telescope's polar axis with the North Celestial Pole (or South Celestial Pole if observing from the southern hemisphere).

With a polar-aligned telescope, tracking celestial objects is possible by simply turning on the drive motor in the base of the telescope. The motor counteracts the Earth's rotation, keeping objects in the field of view. Also, with a polar-aligned telescope, the telescope's R.A. and Dec setting circles may be used to locate faint objects directly from their catalogued coordinates.

Polar Alignment Procedure

Make sure the telescope is firmly attached to the tripod, as described above, with the latitude lock knob (11, Fig 1) and the latitude lock lever (12, Fig. 1) firmly locked.

Step 1 below is equivalent to pointing the telescope's polar axis due north (or due south for observers in the southern hemisphere). Step 2 is equivalent to making the telescope's latitude angle equal to the latitude angle of your observing location.

1. On top of one of the tripod legs, locate the letter "N" (9, Fig. 1). This represents the north leg of the tripod. Pick up the entire telescope-and-tripod and place the tripod so that the leg marked "N" points due north. For observers in the southern hemisphere (e.g., Australia, South America, Africa, etc.), the leg marked "N" should point due south.
2. Determine the latitude of your observing location from a road map, atlas, or refer to the telescope instruction manual. To set the latitude of the tripod to your observing location, loosen the latitude lock knob (11, Fig. 1). Turn the fine latitude adjustment knob (4, Fig. 1) *clockwise* or *counterclockwise* until the latitude pointer indicates the correct latitude on the latitude scale (3, Fig. 1).

It may be necessary to loosen the lock nut on the fine latitude adjustment knob (4, Fig. 1) to allow enough movement of the mount to achieve the latitude of your location. Once the desired latitude has been set, tighten the lock nut until it is flush against the mount. Tighten the latitude lock knob (11, Fig. 1) as well.

NOTE: The fine azimuth adjustment knobs (9, Fig. 1), which move the telescope horizontally without moving the tripod itself, may be used to aid in the alignment procedure.

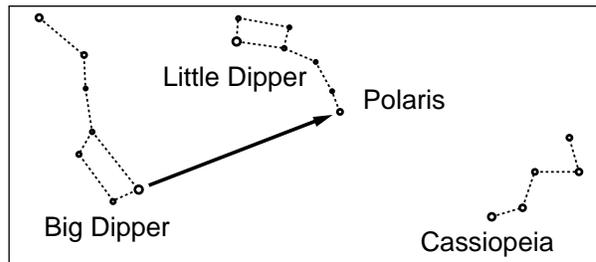


Fig. 4: Locating Polaris.

By following the above procedure, the telescope is polar-aligned for most celestial observing applications. Approximate polar alignment is sufficient in the great majority of these applications.

Important Note: For almost all astronomical observing requirements, approximate settings of the telescope's latitude and polar axis are acceptable! Do not allow undue attention to precise polar alignment of the telescope to interfere with your basic enjoyment of the instrument.

Using the North Star (Polaris) to find North will aid in polar alignment. Polaris can be found in relation to the Big Dipper by projecting a line from the so-called "pointer stars" of the Big Dipper (Fig. 4). For southern hemisphere alignment, locate south by using the faint star Sigma Octans (the South Star).

Using a Polar-Aligned Telescope

Once the telescope is polar-aligned, the telescope motor drive will keep a celestial object in the field of view of the telescope.

1. To center a celestial object within a polar-aligned telescope, see the appropriate section in the telescope's instruction manual (for the ETX-90RA model, see **Locating Astronomical Objects**; for ETX-90EC and ETX-125EC models, see **Observing with the Electronic Controller**). Do not move the tripod or adjust the latitude angle when centering an object in the telescope as this will destroy the polar alignment.
2. Activate the telescope's motor drive. **The motor drive keeps celestial objects within the telescope's field of view.**
 - ETX-90RA: The On/Off switch is located on the bottom of the drive base.
 - ETX-90EC or ETX-125EC: See the **Modes of Operation** section of the telescope's instruction manual.

NOTE: Depending on the accuracy of the alignment procedure, it may be necessary to use the R.A. and Dec slow-motion controls (ETX-90RA) or the Electronic Controller arrow keys (ETX-90EC or ETX-125EC), to make minor adjustments to keep celestial objects in the field of view.

3. The motor drive disengages when the R.A. and Dec lock levers are unlocked and re-engages when the lock levers are locked, making it possible for the motor drive to remain on during an entire observing session.
4. At the end of an observing session, remember to turn off the motor drive.

If you have a question concerning use of the #883 Deluxe Field Tripod, call the Meade Instruments Customer Service Department at (949) 451-1450, or fax at (949) 451-1460. Customer Service hours are 8:30 AM to 4:30 PM, Pacific Time, Monday through Friday.



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