

ASTRO-PHYSICS, INC.

POLAR ALIGNMENT TELESCOPE AND ILLUMINATOR (PASILL)

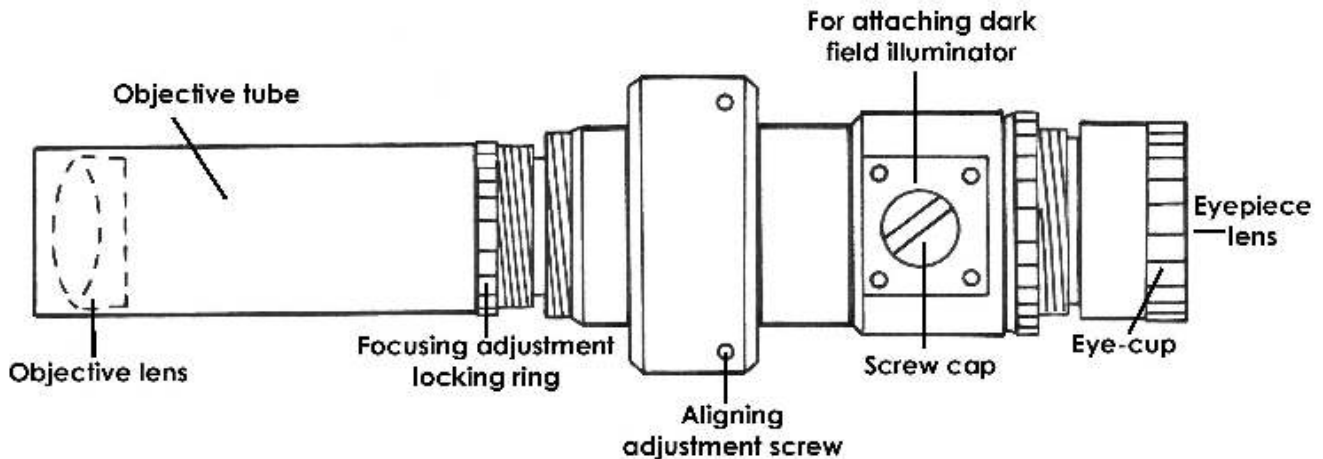
This is the original model, which was shipped until January 2000.
It fits all 400, 600, 600E, 800, 900 and 1200 models (except the original black 1200s).

The polar alignment telescope (also called polar axis scope) will help you to align your mount with the precise north celestial pole. If your mount is aligned properly, your drive motor will track celestial objects accurately throughout the night. This will allow you to sit back and enjoy the view without constantly adjusting your telescope to follow stars that are drifting continually out of your eyepiece. If you plan to take astrophotos, proper alignment is critical so that the images recorded on film are as tight and round as possible. Improper alignment will result in elongated star images. The polar alignment scope is for use in the Northern Hemisphere only.

This scope utilizes a special-condenser system, which makes it possible to view the entire reticle in a single glance. The reticle has a special setting pattern that makes alignment easy. The dark field illuminator is a red LED, which illuminates the reticle so it can be seen clearly against the night sky.

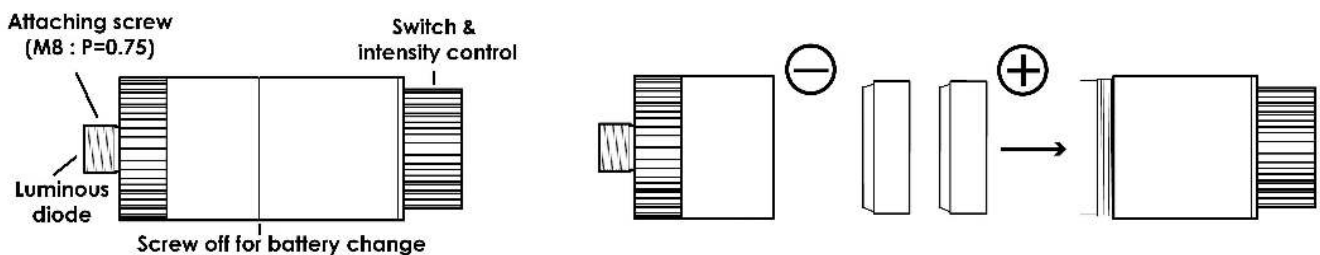
Polar Alignment Scope

Specifications:	Magnification: 5X
	Achromatic objective lens: 20mm
	Eyepiece: K22mm (Diopter adjustable)
	Field of view: 8 degrees
	Reticle: Condenser system setting pattern
	Accessory: Allen wrench (for M3 1.5mm, included)



Illuminator

Specifications:	Rated voltage: 3VDC
	Power consumption: 16mA
	Light: red LED
	Battery: Button-type: two Varta V76 PX or equivalent
	Your camera dealer can help you.
	Radio Shack hearing aid battery, P675M
	cat. no. 23-145, pkg. of 6 for \$2.79



Installation and Adjustments

We recommend that you install and adjust your polar alignment telescope in daylight, without the telescope and counterweights, following the instructions in this section. Once the reticle is properly adjusted so its center circle is mechanically and optically aligned with your mount, the alignment will remain stable, barring any strong shock to your mount.

1. Adjust the diopter: Loosen the diopter adjustment locking ring and turn eyepiece until the reticle is sharply in focus. Tighten the locking ring to lock the eyepiece in place.
2. Adjust the focus: Loosen the focusing adjustment locking ring and turn the objective tube until you get a sharply focused image of a distant object. Tighten this locking ring to lock the objective tube in place.
3. Remove the sight hole cover on the declination axis and rear cap (or encoder adapter and housing) on the polar axis.

4. Turn the declination axis until the hole in the shaft is aligned with the sight hole. You will be able to see through the mount along the line of vision represented by the solid line in the diagram on this page.

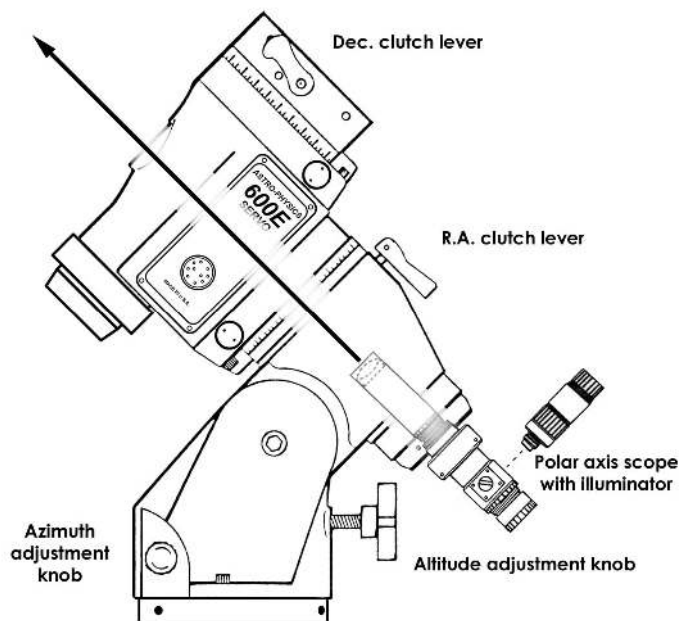
5. Thread your polar alignment telescope into the rear of the polar axis.

6. Using the mount's azimuth and altitude adjustment knobs, aim your polar axis telescope at a distant object, such as the top of a telephone pole, placing it within the center circle of the reticle. Please refer to the section pertaining to altitude and azimuth adjustments in your mount manual for specific details. Tighten the altitude locking knob to hold the mount in position.

7. Turn the right ascension axis while looking through the polar axis telescope. You will see the distant object moving around and out of the central circle.

8. Using the Allen wrench provided, adjust the polar alignment scope's aligning adjustment screws until the distant object is again within the center circle of the reticle. You are adjusting the polar alignment scope to be orthogonal with your mount.

9. Continue repeating these steps until the distant object does not move out of the central circle when the right ascension axis is turned. Your polar axis telescope is now aligned with your mount's polar axis.

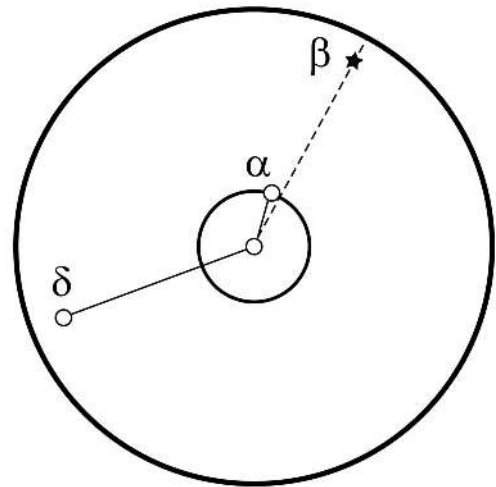


Using your Polar Alignment Telescopes

1. Set up your mount according to the instructions in this manual including your rough polar alignment (refer to the manual for the mount).
2. Attach the illuminator to the polar axis telescope by removing the screw and threading in the illuminator. Please note that the illuminator requires batteries (see specifications). Use the "On/Off" switch to adjust brightness.
3. Turn the declination axis until the hole in the axis is aligned with the polar axis holes. You will be able to see through the polar axis telescope along the line of vision represented by the solid line in diagram on this page.

4. While looking through the polar axis telescope, make adjustments to the altitude and the azimuth adjustment knobs until Polaris and Delta Ursa Minoris (the last and second-last stars in the Little Dipper's handle, respectively) are within your field of vision.
 - Polaris (Alpha Ursa Minoris)
 - Delta Ursa Minoris
 - broken line indicates direction toward star outside field, it is not important
5. Using the altitude and azimuth adjustment knobs, continue to make adjustments until Polaris is seen through the small circle closest to the center of the reticle and Delta Ursa Minoris is located within the small circle closest to the outer edge of your field of vision.
6. When proper alignment has been achieved, snug the two altitude adjustment knobs lightly to secure the polar axis and recheck alignment. If no movement has occurred, finish hand tightening the two altitude adjustment knobs and pier knobs to prevent movement when the telescope and counterweights are attached. For permanent installation, all knobs may be firmly tightened with the assistance of a hex wrench.
7. Now your mount is aligned with the pole. Remove the polar axis scope since you do not need it any longer. Remember to turnoff the batteries in the illuminator. You are ready to attach your counterweights, then your telescope and begin a night of observing. Enjoy yourself!

SETTING PATTERN RETICLE



Remarks

1. Remove the batteries from the illuminator when not in use; the unit may be damaged if the batteries should leak.
2. Extremely cold temperatures may affect the brightness of the LED.