

# Polar Alignment

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## **What is Polar Alignment and why do it?**

- Alignment of the RA axis of the telescope mount with the polar axis of the earth.
- Necessary on Equatorial Mounted Telescopes.
- Necessary for astro-photography.
- Required for both prime-focus and piggyback photography.
- Accuracy needed and method depends on application.

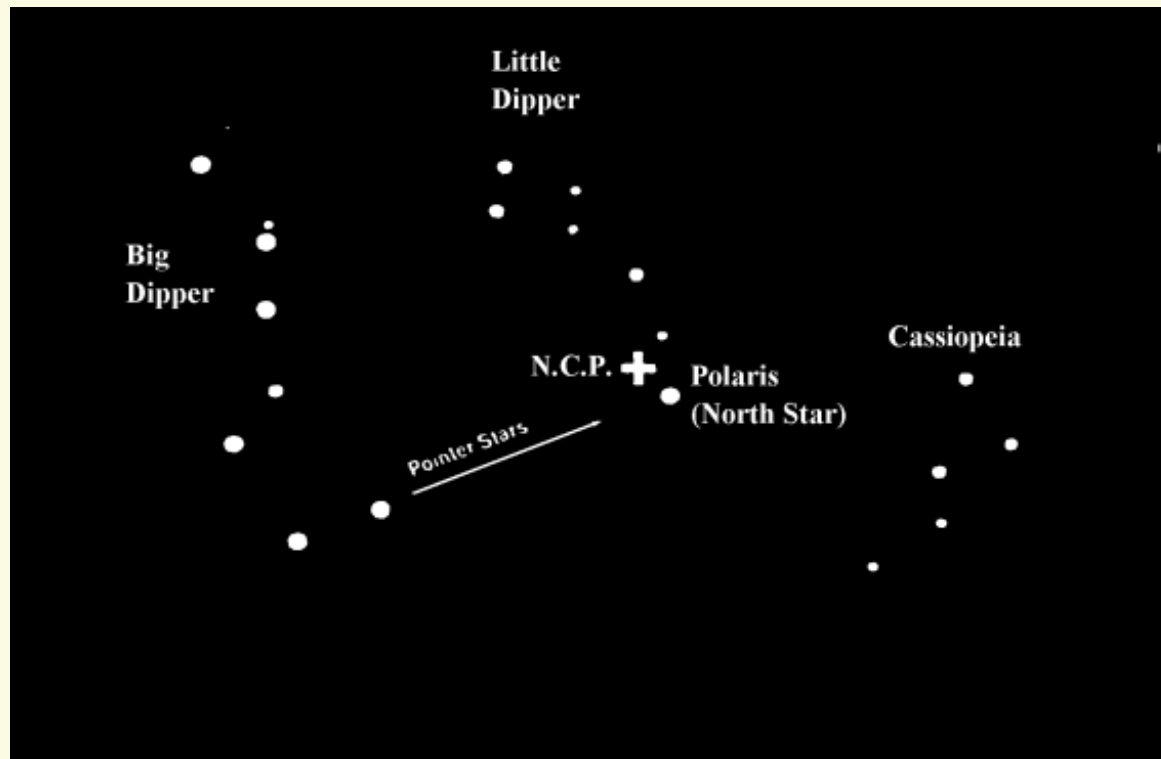
# Visual Polar Alignment

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- Sufficient for visual use.
- Find Polaris, line up axis.
- Polar Alignment scope can help
- Not good enough for greater than approximately 5 minute exposures at prime focus

# Visual Polar Alignment

- Visually align with Polaris and adjust for True North.
- Polaris is  $5/6^\circ$  towards  $\epsilon$  Cassiopeia.
- Telrad rings are  $4^\circ$ ,  $2^\circ$  and  $1/2^\circ$  apparent diameter



# Drift method of Polar Alignment

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- Choose a star close to where the celestial equator intersects with the meridian and try to track it for some time with a high power eyepiece
- If it seems to drift southward, the polar axis is too far east.
- If it seems to drift northward, the polar axis is too far west.
- Choose a star about  $20^\circ$  above the eastern horizon and track it for some time with a high power eyepiece.
- If it drifts northward, the polar axis is aimed too high.
- If it drifts southward, the polar axis is aimed too low.
- Repeat until no drift for 5 minutes.

# Drift method of Polar Alignment

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- More Accurate than visual methods.
- Suitable for long exposure astro-photography.
- Mount can be scribed or locked to speed setup.