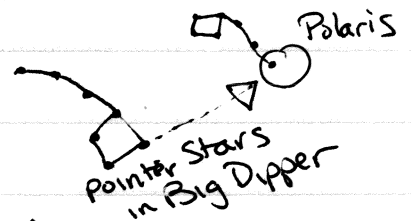
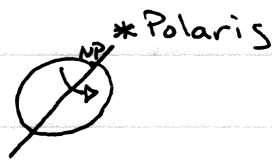
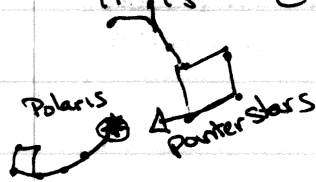


Aim: How can we use stars to determine location?

1. Earth's Rotation (spin) causes stars (sun), moon & planets to APPEAR to rise in the East, set in West.

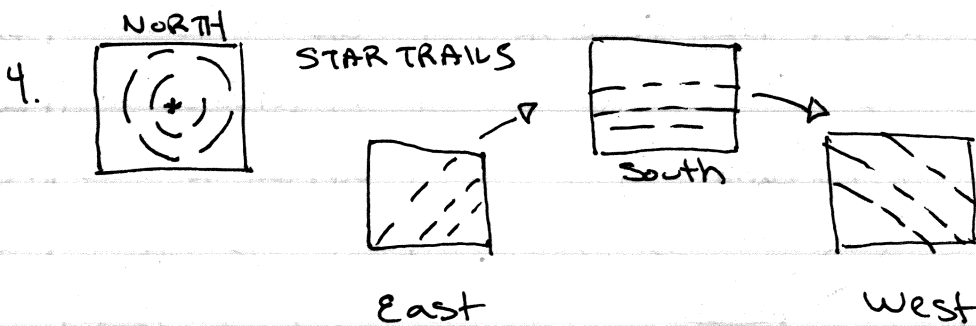
2. Polaris (North Star) NEVER appears to move because it is directly over the North Pole.



3. Star Trails appear to move  $15^\circ/\text{hour}$  due to Earth's Rotation.

Ex.  $30^\circ$  trail = 2 hours  $\frac{30^\circ}{15^\circ/\text{hr}}$

$90^\circ$  trail = 6 hours  $\frac{90^\circ}{15^\circ/\text{hr}}$



5. Polaris altitude = Latitude

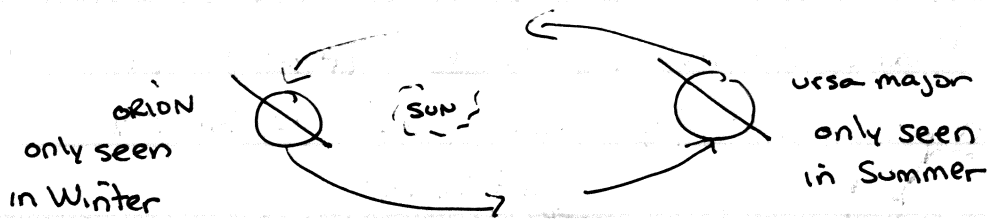
Equator =  $0^\circ \text{N}$  =  $0^\circ$  Polaris

NYS =  $41^\circ \text{N}$  =  $41^\circ$  Polaris



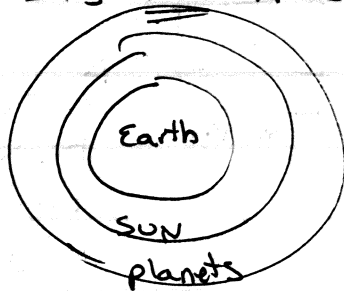
## Revolution

- ① Constellations change over one year due to Earth's Revolution around the Sun.



## ② Geocentric

- Earth at center of Solar System
  - Sun, Planets, Moon Revolve around Earth
- \* This is NOT true \*



## v. Heliocentric

- Sun at center of Solar System
- Earth + Planets + moon revolve around the Sun
- Earth Rotates; causing sun/stars/moon/planets to appear to Rise in East, Set West.

