Observational Astronomy Basics

Palm Coast Astronomy Club

September 29, 2008

Visit Club's Website

- http://whittsearthscience.tripod.com/astronomy.htm

Helpful Items

- Sky Map/Chart - http://www.skymaps.com/
- Compass
- Red Light-flashlight w/red plastic wrap or red lens
- Sketch Pad or checklist of objects to view
- Binoculars- 7 x 50
  - 7 refers to magnification
  - 50mm is the diameter of the 2 objective lenses
- Telescope-buy good quality or use binoculars

Things to Do

- Find a suitable location
  - Avoid city lights=light pollution
  - Join International Dark Sky Association (IDA)

Things to Do

- Find a suitable location
  - Avoid city lights=light pollution
  - Broad view of sky (avoid tree lines & tall buildings)
  - Poor air quality-
    - Objects twinkle due to poor air conditions
    - Solution-high altitude or dry region
- Arrive early to set up-can be difficult to set up in the dark
- Be familiar w/brightest objects for that month

Plan for Comfort

- Folding Chair
- Drink
- Bug Spray
- Light Jacket

Viewing the Night Sky

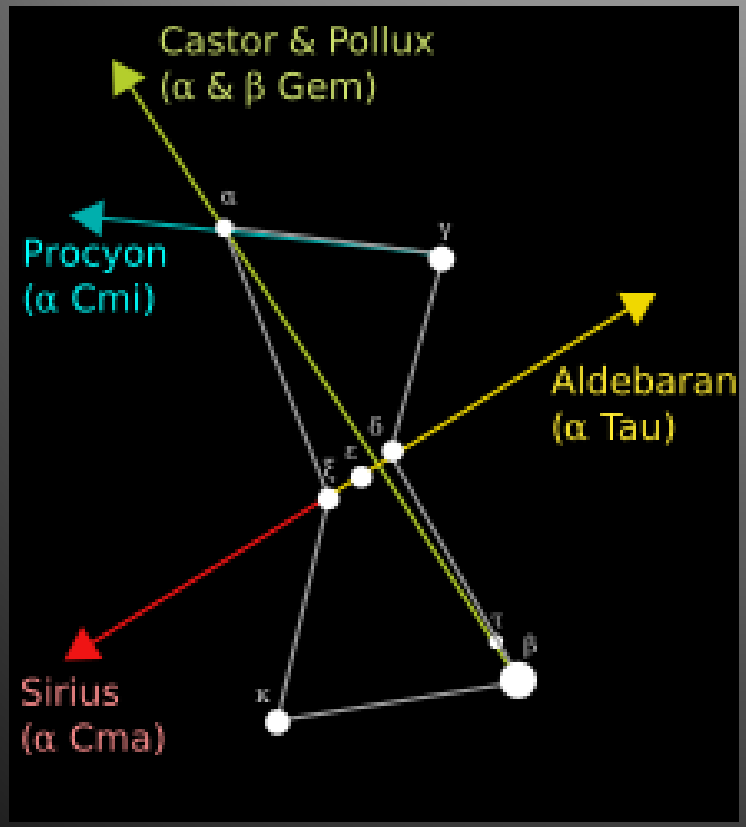
- Allow your eyes to adjust to the darkness
- Look for the brightest objects-planets, constellations, and moon-use star map
- Use a red light so your eyes stay dark adapted
- As the sky becomes dark, brightest stars appear first
- Stars vary by season unless polar stars

Viewing the Night Sky (cont.)

- Stars in the west “set” soon after they appear.
- Rising stars in the east appear to move across the sky towards the west
- Easy objects to recognize:
  - Orion, the hunter
  - Big Dipper
  - Cassiopeia
  - Pleiades or Seven Sisters

Orion, The Hunter

Shape of hourglass with 3 bright stars on the belt

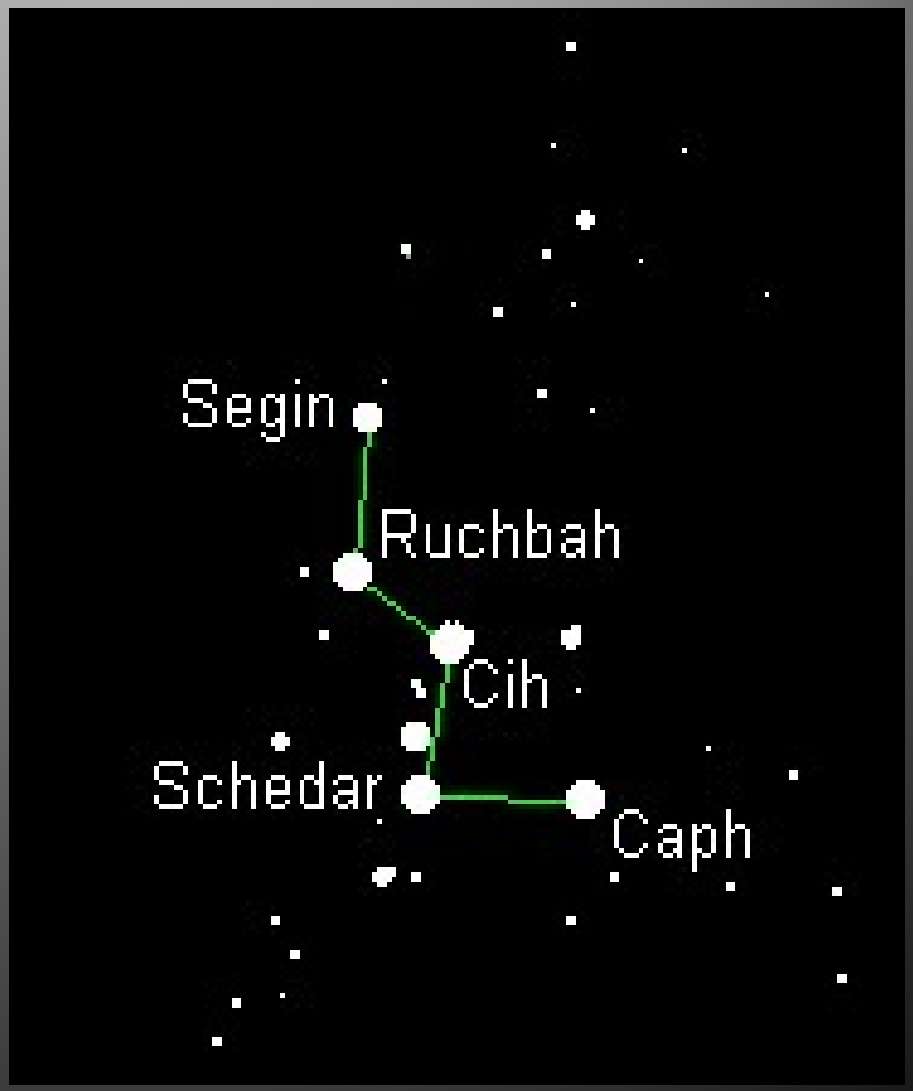


Big Dipper

Pointer Stars-draw an imaginary line from 2 stars that make up the edge of the bowl to find Polaris.

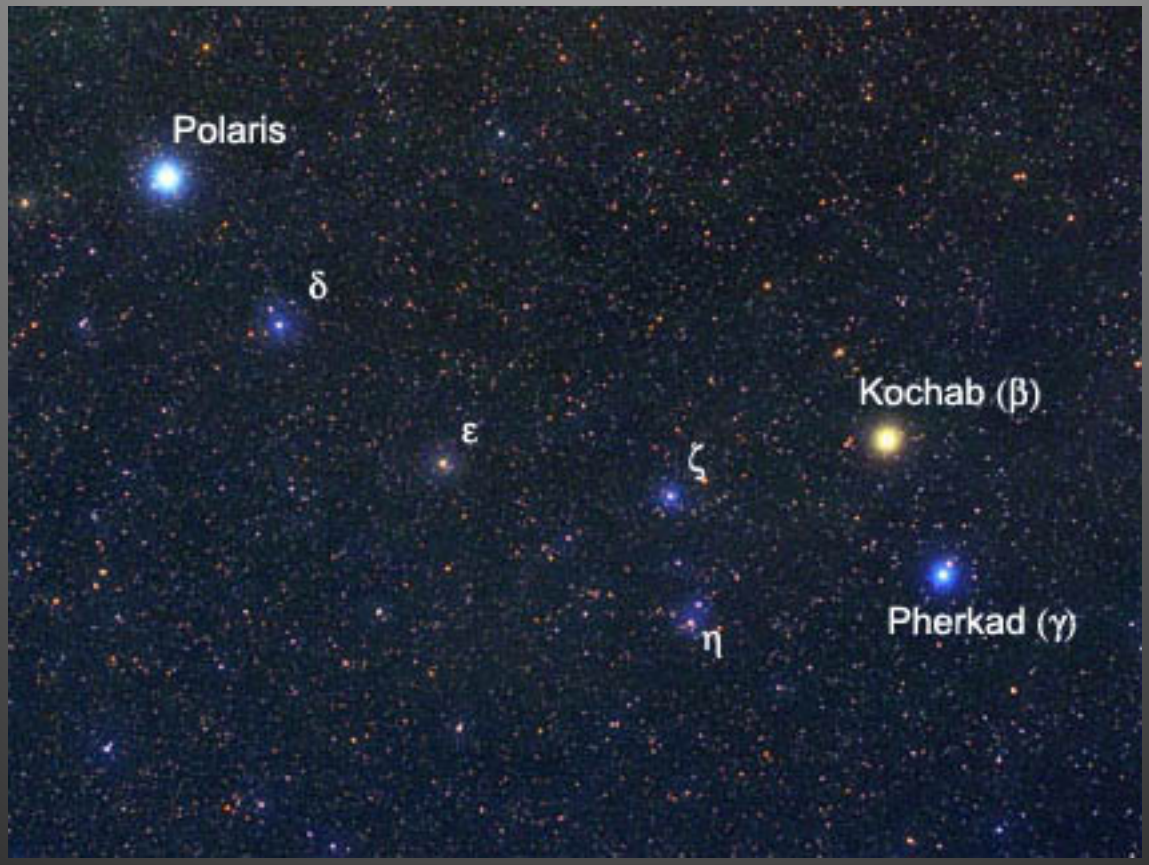
Cassiopeia

Five Bright Stars
- Looks like “W” in the spring
- Looks like “M” in the fall
- Across the pole from Big Dipper



M45-Pleiades-Seven Sisters

Little Dipper & Polaris



Objects to View Now

- This Week at a Glance- http://www.skyandtelescope.com/observing/ataglance
- September Viewing http://astronomy.libsyn.com/
- Space.com Viewing http://www.space.com/spacewatch/sky_calendar.html

Podcasts

- Audio presentations you can download to your computer or mp3 player
- Listen to a guide of the night sky at your computer or in your earphones
  - Monthly Podcast- Astronomy Go Go http://astronomy.libsyn.com/index.php?post_id=373572
  - Listen to October Tour-AOL

http://aolradio.podcast.aol.com/nightsky/nightsky_podcast071001.mp3

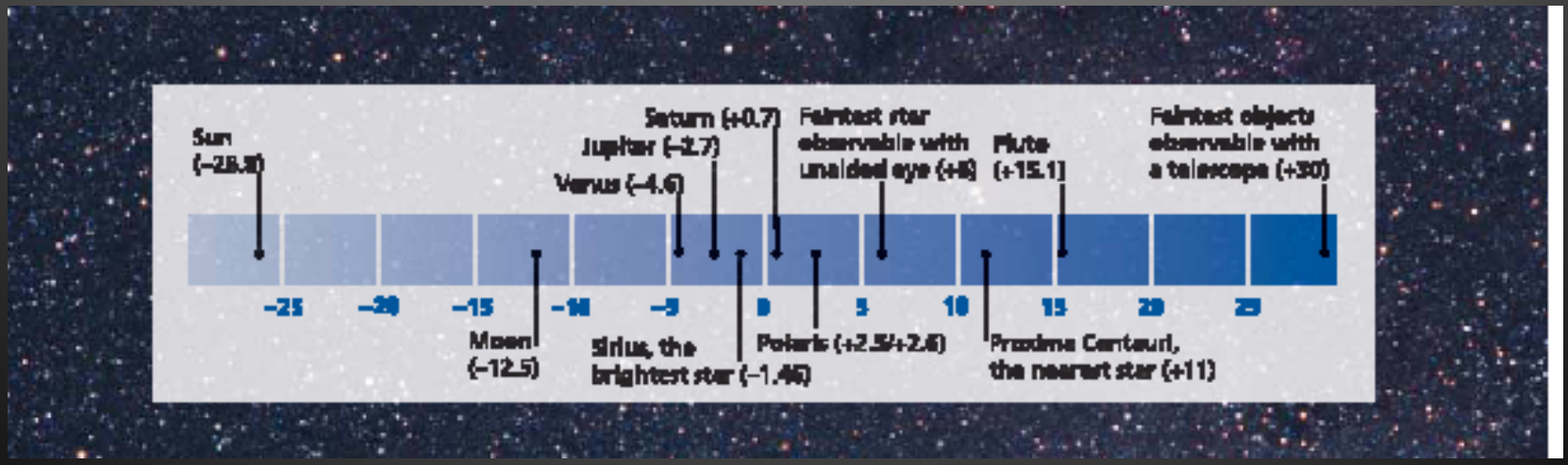
  - Sky & Telescope Podcast- http://www.skyandtelescope.com/observing/highlights

Interactive Night Skies

- Interactive Night Sky
- Free open source software you can download
- http://www.stellarium.org/
- Interactive Sky Chart- http://www.skyandtelescope.com/observing/skychart/

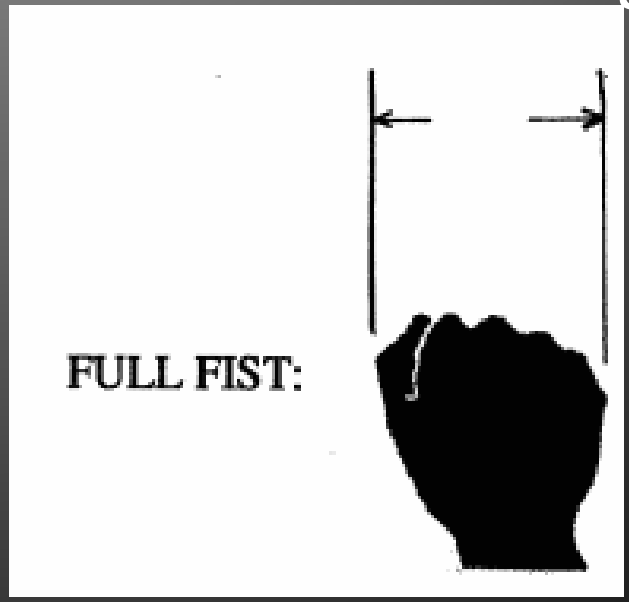
Terms to Know

- Apparent Magnitude-how bright the object appears to us from Earth
- The lower the number, the brighter the star



Estimating Distance in Degrees

- Two full Moons edge-to-edge = 1 degree.
- The tip of your pinkie finger on outstretched arm = 1 degree
- Outstretched fist (from thumb to little finger) = 10 degrees.



Recording What You View

- Lunar 100- http://www.astronomy.com/asy/default.aspx?c=a&id=4706
- Messier Catalog http://seds.org/messier/data3.html
- Messier's Marathon Observers Form- http://seds.lpl.arizona.edu/messier/xtra/marathon/marath1.txt

Go Outside & Look Up!!