

# *April 2023 Astronomy Report*

- ***Moon:***
  - Phases
- ***Planets:***
  - Evening planets - Mars, Venus, Uranus, Mercury
    - Mercury & Venus best display of the year
    - Mars in Gemini (longest duration in night sky)
  - Morning planets - Saturn, Neptune
    - Saturn in Aquarius (improving)
  - Jupiter not visible (solar conjunction 4/11)
- ***Asteroid / Meteor Shower:***
  - Ceres / Lyrid
- ***Constellations:***
  - Dark Sky Star Party, April 22
- ***Tell Time with the Big Dipper***

# Moon - Phases

April 6 - Full Moon (Virgo)



April 13 - Last Quarter (Sagittarius)



April 20 - New Moon

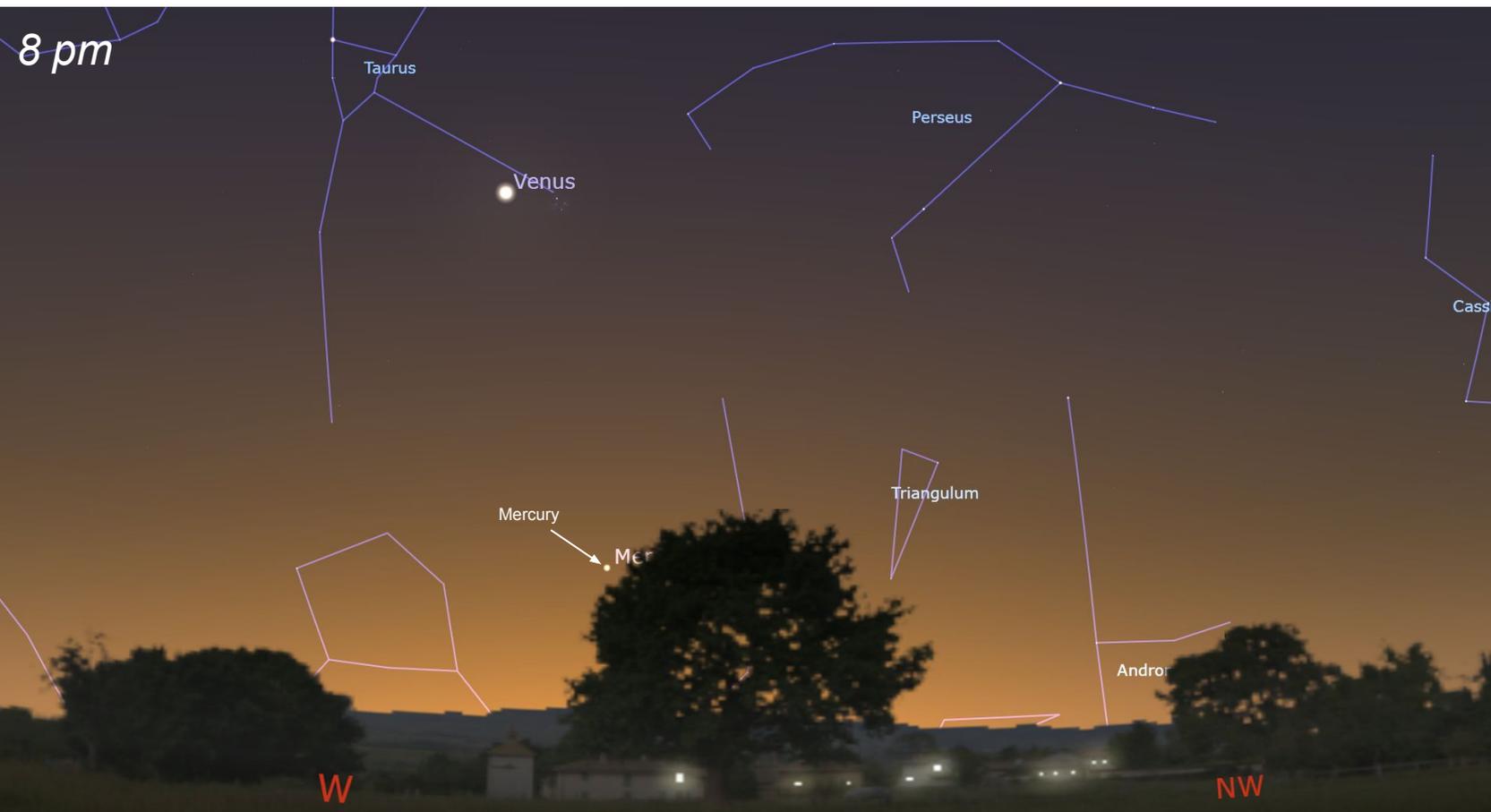
April 27 - First Quarter (Cancer)



Apogee (251K miles) - 28th  
Perigee (229K miles) - 15th

# Planets - Venus & Mercury twilight appearance, April 11

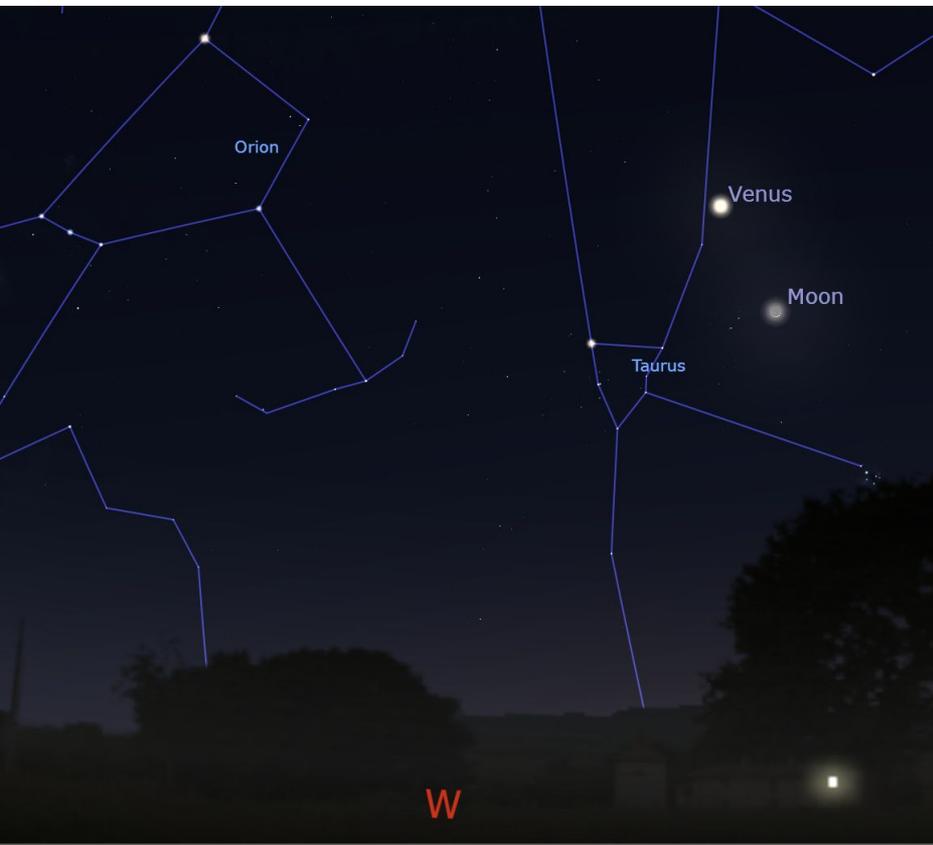
*Mercury best evening appearance of the year, greatest eastern elongation from Sun (19 deg) on April 11*



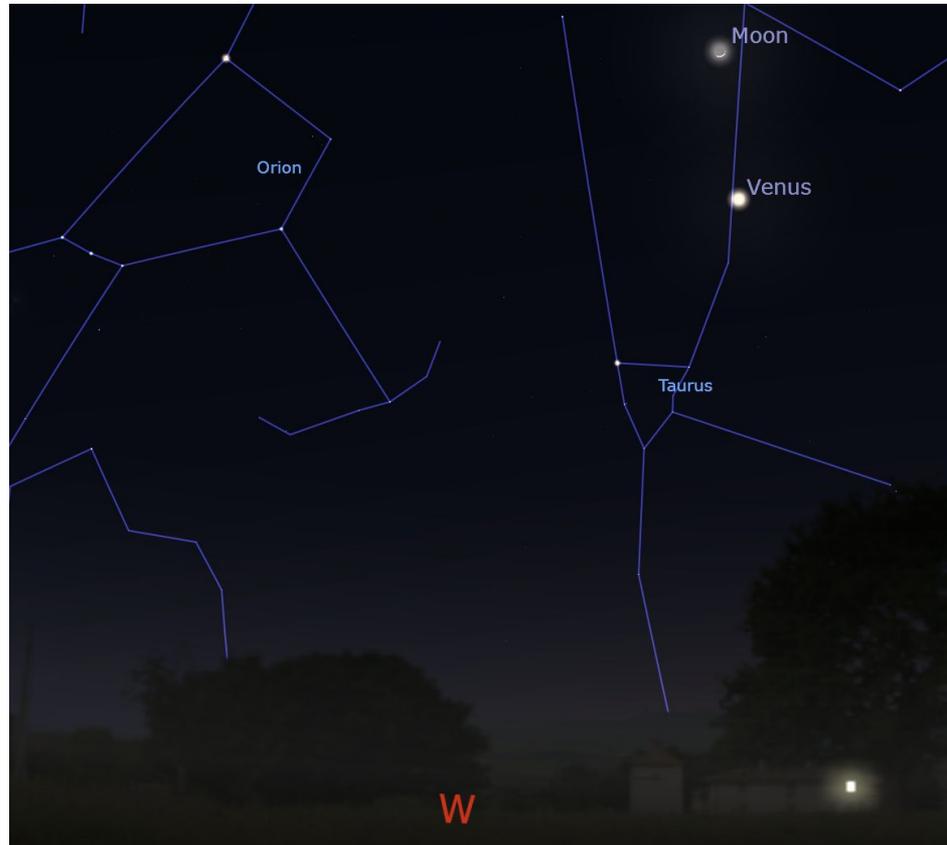
# Planets - Moon & Venus, April 22-23

*Venus climbing upward, brighter and larger throughout April, ends month between horns of Taurus the Bull (approaching Earth - inferior conjunction in August)*

**April 22, 8:30 pm**



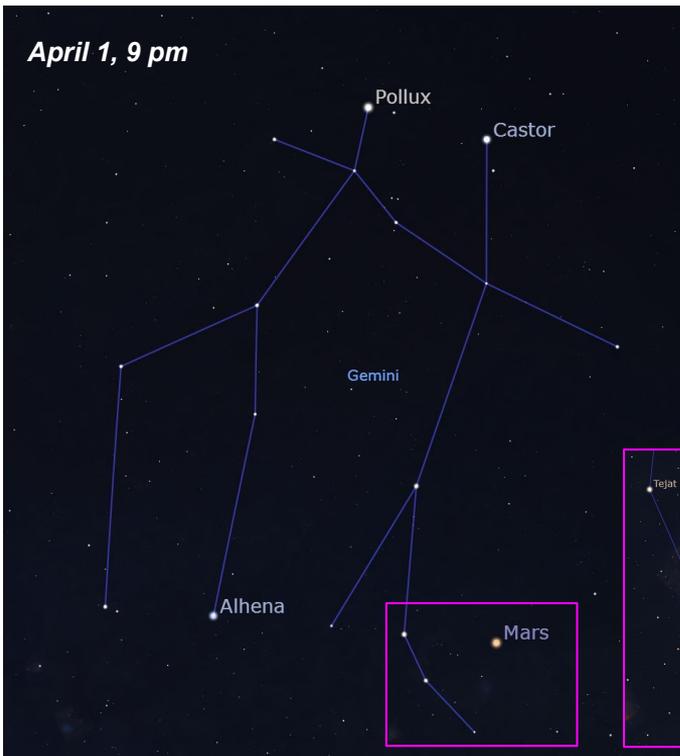
**April 23, 8:30 pm**



# Planets - Mars in Gemini

*Mars continues increasing its distance from Earth, remains visible above horizon until midnight all month*

**April 1, 9 pm**



**April 14, 9 pm**



**April 25, 9 pm**



# Planets - Saturn in Aquarius

*Saturn rises earlier (~2 hours), becoming brighter during April*

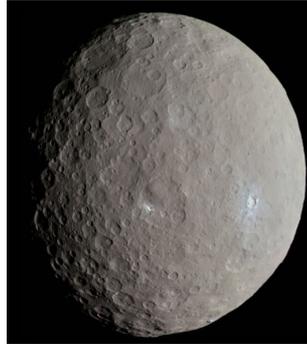


*Titan "easy to spot" at 8th magnitude*

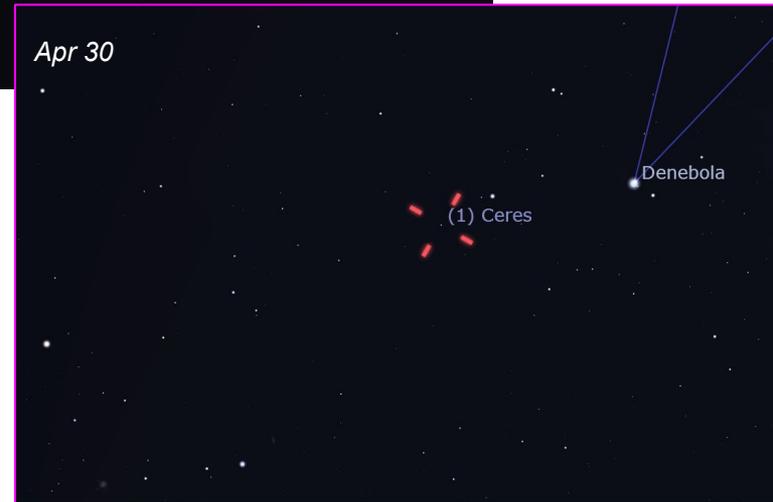
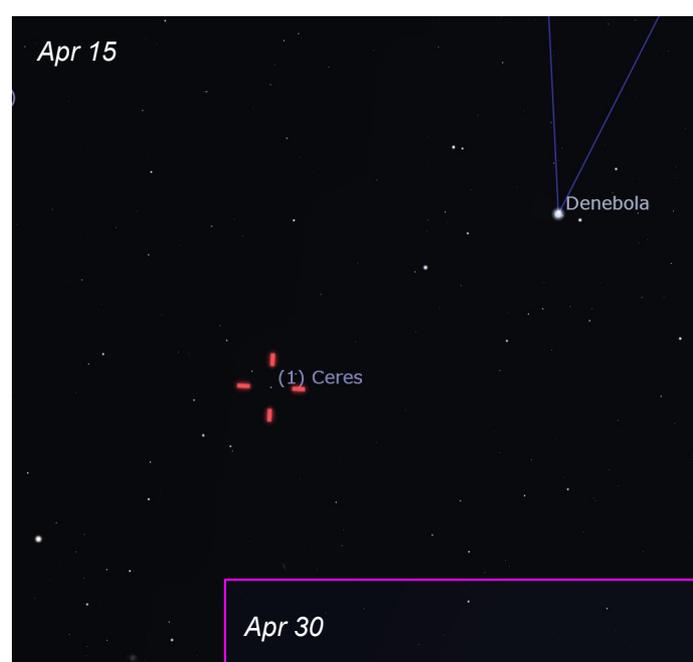
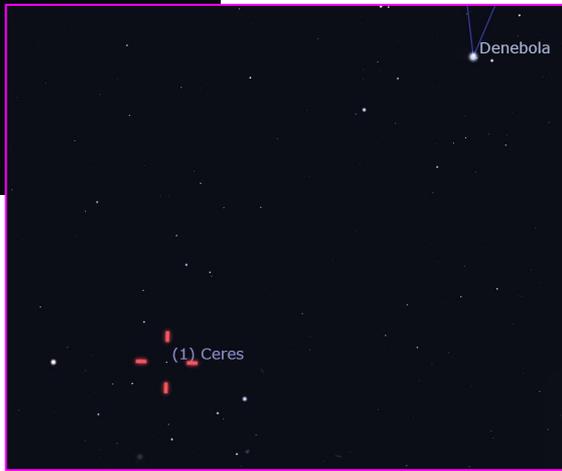


# Asteroid - Ceres

- dwarf planet (2006), 600 mile diameter
- 1st discovery in asteroid belt
- visible w/ binoculars, E sky near Leo



All views 9 pm



# Meteor Shower - Lyrid

- active April 14 -30; peak date overnight April 22/23 (Dark Sky Star Party)
- max rate at peak: 18 meteors/hour, moon already set, radiant rises highest before dawn (straight up at 5 am)





**M82 (Cigar Galaxy)**



Hubble image

**M101 (Pinwheel Galaxy)**



Hubble image

**M97 (Owl Nebula)**



Stargazer Observatory

**M66 (Leo Triplet)**



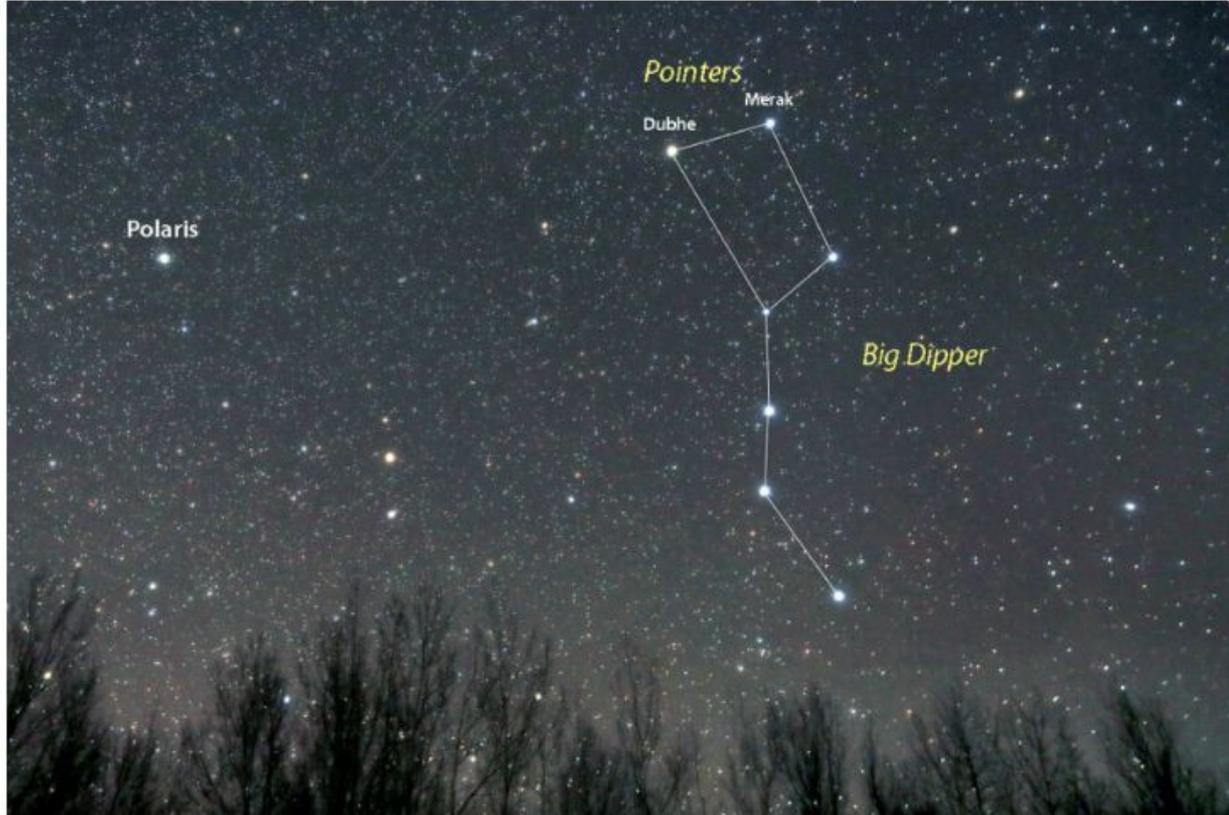
Wikimedia image

**M83 (Southern Pinwheel Galaxy)**



Hubble image

# *Tell Time with the Big Dipper*



The Big Dipper ascends the evening sky at nightfall in mid-March. Using Polaris and the Dipper's Pointer Stars, you can make a simple clock.

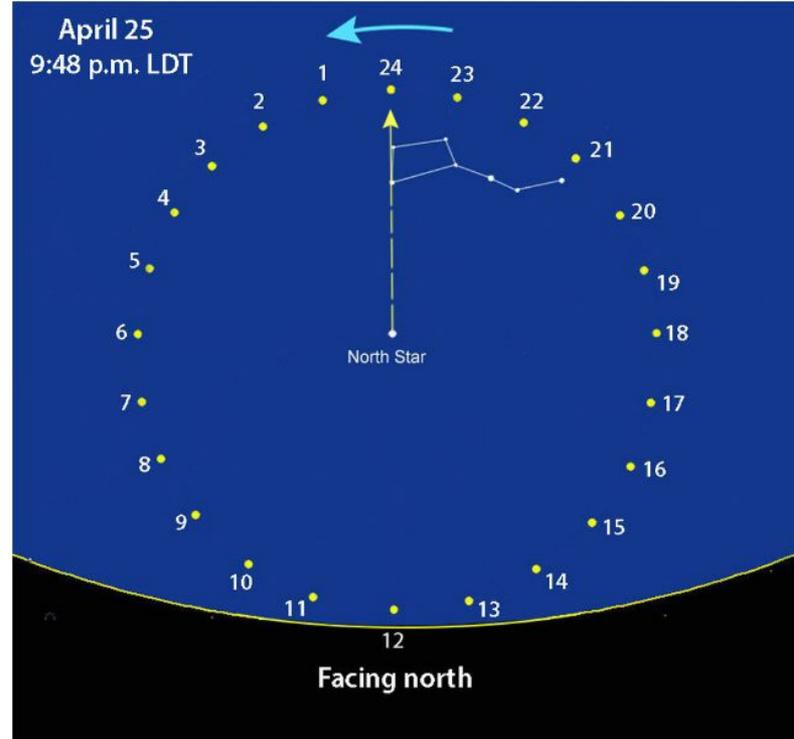
*Bob King*

# Tell Time with the Big Dipper

April 25, 9:48 pm



Time = Dipper Time - (2 x number of months since March 6th)

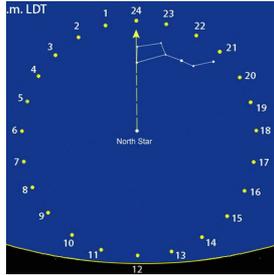


Time = 24 - (2 x 1.6 months) = 24 - 3.2, which is 20.8 hours on the 24-hour clock

Convert the decimal to minutes (0.8 x 60) to get 8:48 p.m. local standard time (LST).

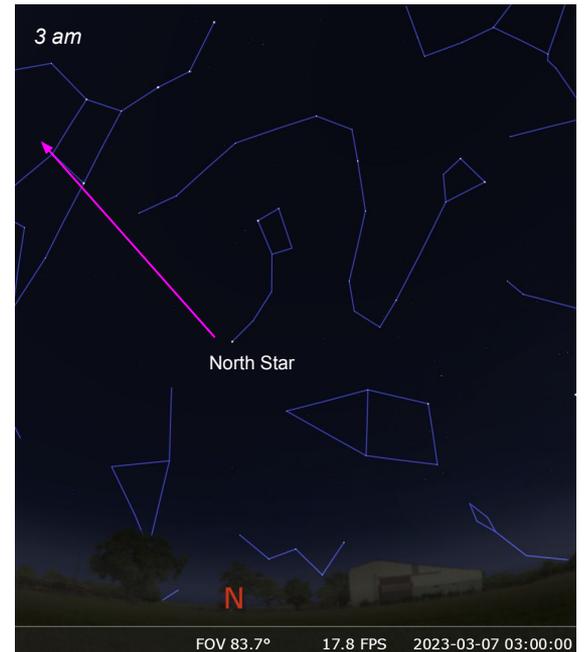
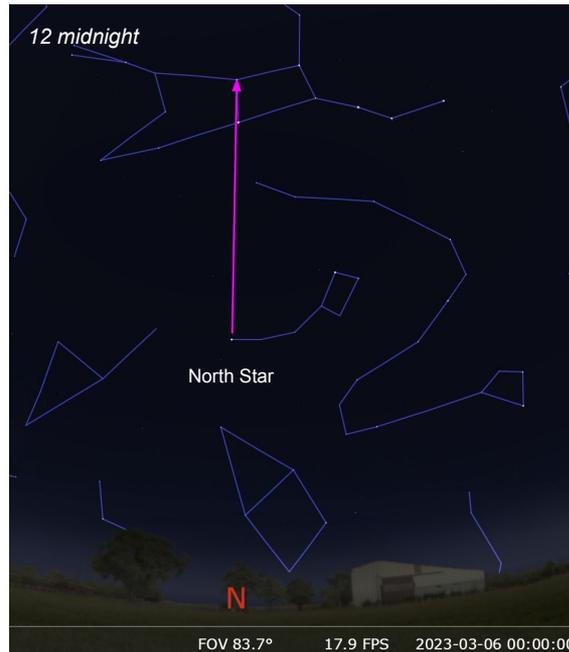
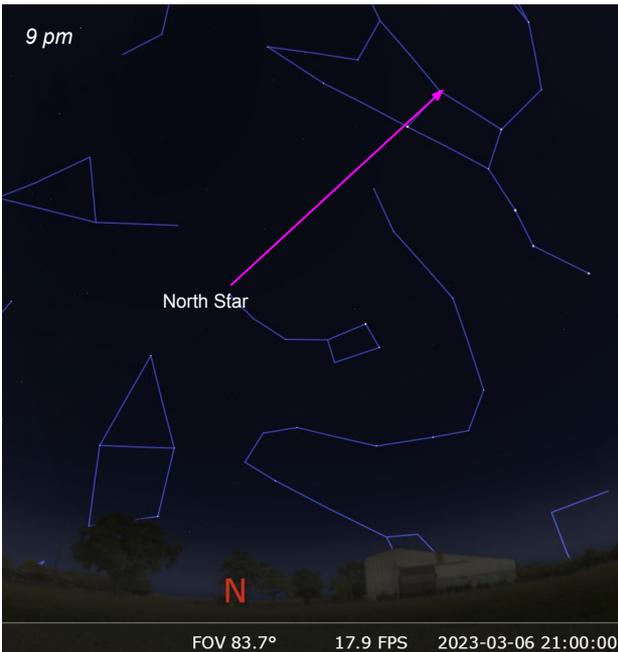
Add 1 hour for daylight-saving time

# Tell Time with the Big Dipper



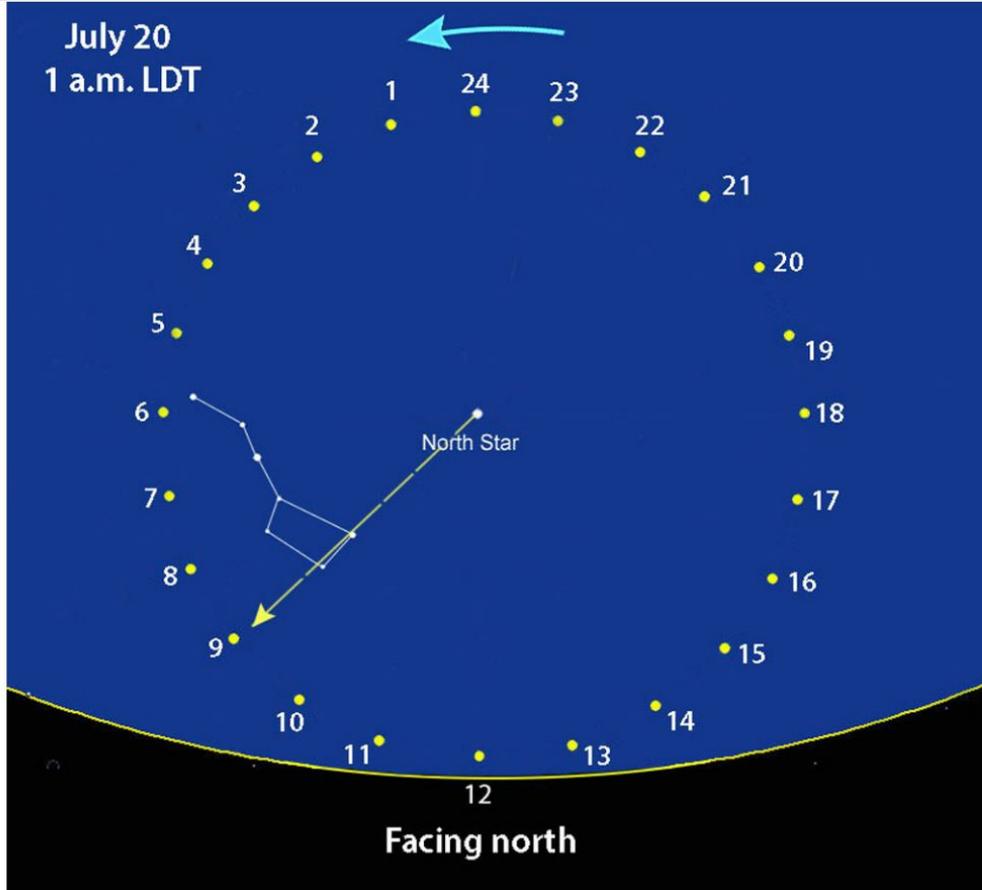
Like a broken watch that tells the correct time twice a day, the Dipper clock gives the correct time on March 6th. On that date, if the Polaris-Pointers hour hand points to 22, it's 10 p.m. If 19, it's 7 p.m. For all other dates, use this simple equation:

$$\text{Time} = \text{Dipper Time} - (2 \times \text{number of months since March 6th})$$



# Tell Time with the Big Dipper

**Time = Dipper Time – (2 x number of months since March 6th)**

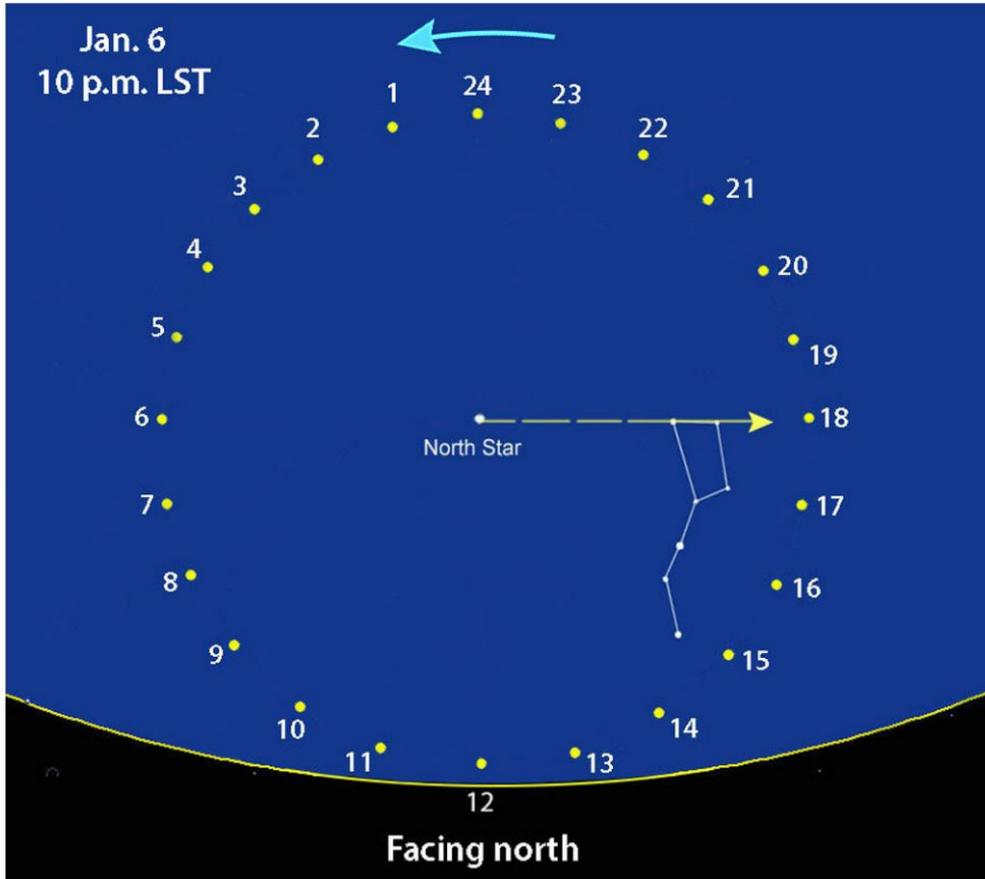


On July 20th (about four and a half months from March 6th), if the Dipper clock reads 9:00, we solve for the time:  $9 - (2 \times 4.5) = 9 - 9 = 0$ . Add 1 hour for daylight time and the correct time is around 1 a.m. local daylight time.

*Stellarium with additions by Bob King*

# Tell Time with the Big Dipper

Time = Dipper Time – (2 x number of months since March 6th)



On January 6th, if the Dipper clock reads 18:00, we solve for the time:  $18 - (2 \times 10) = 18 - 20 = -2$ . Subtract from 24 to get 22, which translates to 10 p.m. local standard time.

*Stellarium with additions by Bob King*

In our calculation, the solution was a positive number. If your answer is negative, *subtract* it from midnight (24) for the correct time. Based on my own experience with the Dipper clock I've found it accurate to within about 30 minutes. Keep in mind that your time may vary somewhat depending on your location in your time zone — our celestial clock will be a little behind true time if you live toward the western end of the time zone and a little ahead if you're in the east.

Throughout human history, increasing precision in timekeeping has pushed the advancement of both technology and science. Still, it's fun to look back and take pleasure in knowing that the celestial gears continue to hum along.