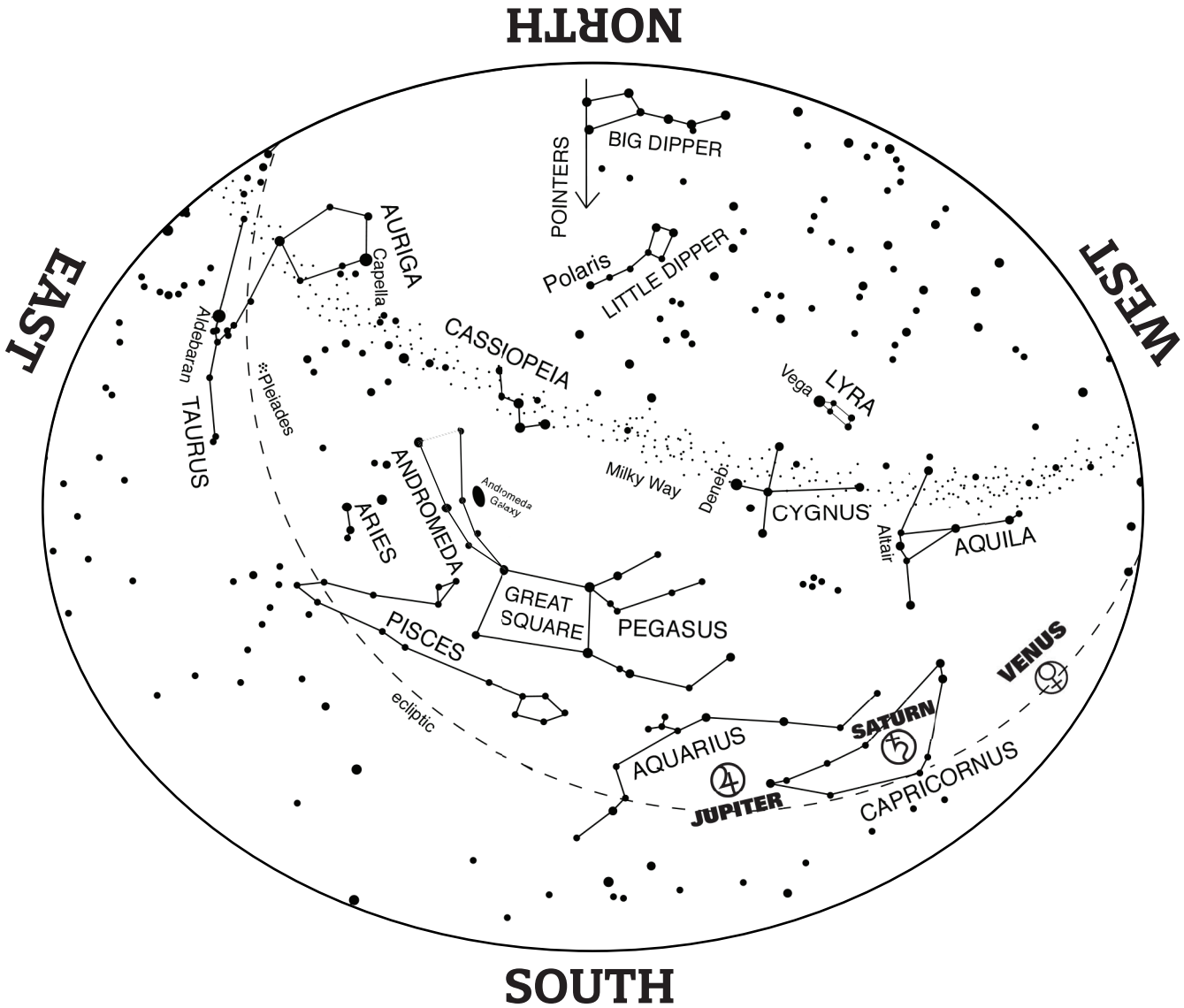


# Starmap

NOVEMBER/DECEMBER 2021



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**TO USE MAP:**

Hold the map in front of you so that the direction you are facing is on the bottom. The stars on the lower half on the map will match up with the stars in the sky. The center of the map is directly overhead in the sky. Constellation and star pattern names are all capitalized. Names of stars have only the first letter capitalized. The map is valid within an hour of:  
7:30p.m. Mid-Nov. EST  
5:30p.m. Mid-Dec. EST

**MAGNITUDE** is a measure of a star's brightness.

The lower the number, the brighter the star

- 1<sup>st</sup> or brighter magnitude star
- 2<sup>nd</sup> magnitude star
- 3<sup>rd</sup> magnitude star
- 4<sup>th</sup> or fainter magnitude star

**ECLIPTIC:**

The imaginary path of the Sun through the year. Constellations of the Zodiac surround the Ecliptic and the Moon and planets appear along it.

# Starmap

NOVEMBER/DECEMBER 2021

## IN THE NOVEMBER/DECEMBER SKY

**Nov 3**

Moon near Mercury and Spica (morning)

**Nov 4**

New Moon

**Nov 7**Eastern Standard Time returns  
(See Celestial Highlights)**Nov 7/8**

Moon near Venus

**Nov 10**

Moon near Saturn

**Nov 11**Mercury near Mars (morning)  
First Quarter Moon near Jupiter**Nov 19**Partial Lunar Eclipse (morning)  
(See Celestial Highlights)  
Full Moon near Pleiades and Aldebaran**Nov 23**

Moon near Pollux

**Nov 27**Moon near Regulus (morning)  
Last Quarter Moon**Nov 28**

Mercury in conjunction with Sun

**Nov 30**

Moon near Spica (morning)

**Dec 2**

Moon near Mars (morning)

**Dec 4**

New Moon

**Dec 6**

Moon near Venus

**Dec 7**

Moon near Saturn

**Dec 8/9**

Moon near Jupiter

**Dec 10**

First Quarter Moon

**Dec 14**Geminid Meteor Shower  
(See Celestial Highlights)**Dec 16**

Moon near Pleiades and Aldebaran

**Dec 18**

Full Moon

**Dec 20**

Moon near Pollux

**Dec 21**Winter Solstice  
(See Celestial Highlights)**Dec 23**

Moon near Regulus

**Dec 26**

Last Quarter Moon

**Dec 27**

Mars near Antares (morning)

**Dec 28**

Venus near Mercury

**Dec 31**

Moon near Mars (morning)

## CELESTIAL HIGHLIGHTS

**Eastern Standard Time returns, November 7, 2:00 am** – Set your clock back one hour on Saturday night, November 6.

**Planet and Moon Pairings** – The crescent Moon is near Mercury and Spica before sunrise on November 3. After sunset the Moon is near Venus on November 7 and 8 and again on December 6. The Moon is near Saturn on November 10 and December 7. Jupiter gets a visit on November 11 and again on December 8 and 9. Before sunrise, the crescent Moon is near Mars on December 2. On December 31 before sunrise, the Moon will form a triangle with Mars on the bottom left and the red star Antares to the right, Antares will be the brighter of the two.

**Partial Lunar Eclipse, November 19, 2:19am EST** – The Full Moon will be partially eclipsed by the shadow of the Earth early on November 19. The eclipse begins at 1:03am when the Moon enters the outer part of Earth's shadow called the penumbra and the Moon's brightness starts to dim about fifty minutes later when the Moon is deeper into the penumbra. At 2:19am the Moon enters the umbra when the partial eclipse really takes shape as the Moon darkens reaching its greatest coverage at 4:04am when 97% of the Moon's disk will lie in shadow. The Moon exits the umbra at 5:48am ending the partial eclipse. To view the eclipse, look to the western sky for the Moon, it can easily be viewed without a telescope. Unlike a solar eclipse, a lunar eclipse is safe to view without any filters. The Pleiades star cluster can be seen above the Moon during the eclipse.

**Moon near Pleiades and Aldebaran, November 19 and December 16** – The Moon passes between the Pleiades star cluster and the red star Aldebaran on the evenings of November 19 and December 16. The star cluster will be above the Moon and Aldebaran below it. The Moon will be full or nearly full those nights.

**Geminid Meteor Shower** – The Geminids peak on Dec 14. Look toward the stars of Gemini, the Twins, in the eastern sky after dark to watch for Geminid meteors.

**Winter Solstice, Saturday, December 21** – is the shortest day of the year for the Northern Hemisphere. The Sun takes its lowest path across the sky and results in the fewest hours of daylight of any day all year (only 9 hours). All through winter, celebrate the slow return of the Sun and notice how the days start to get longer again.

The bi-monthly STARMAP is available on the web at <https://www.mdsci.org/learn/resources/starmaps/>



### MERCURY

**When:**Before sunrise, until November 11  
Not visible, December**Where:**

Low in East-southeast

**Constellation:**

Virgo



### VENUS

**When:**

Evening sky

**Where:**

Southwest to West

**Constellation:**

Sagittarius



### MARS

**When:**

Early Morning

**Where:**

Southeast

**Constellation:**

Virgo, Libra, Scorpius



### JUPITER

**When:**

Evening sky

**Where:**

South to Southwest

**Constellation:**

Capricornus, Aquarius



### SATURN

**When:**

Evening sky

**Where:**

South to Southwest

**Constellation:**

Capricornus