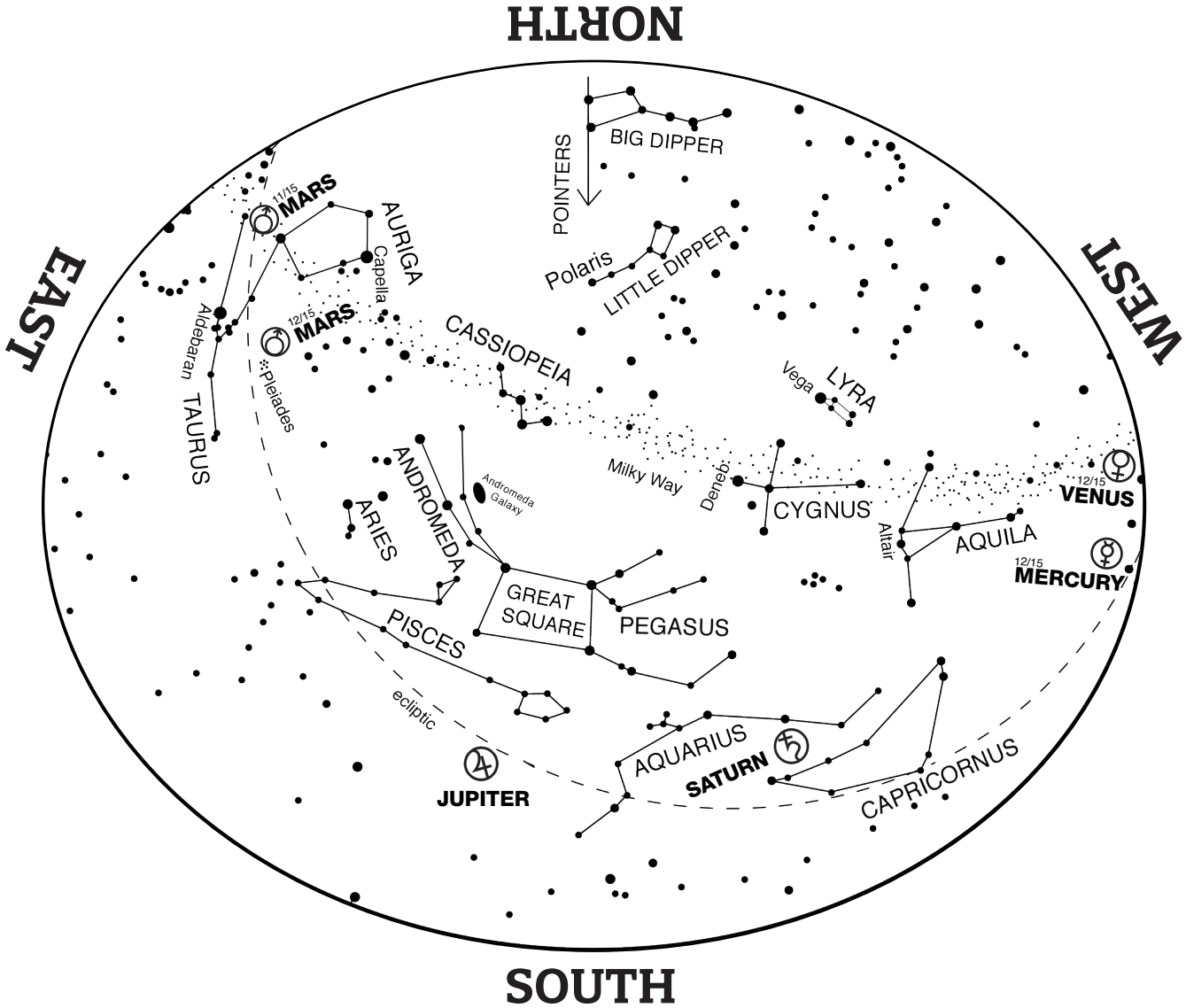


Starmap

NOVEMBER/DECEMBER 2022



601 Light Street • Baltimore's Inner Harbor
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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:
7:30pm Mid-Nov. EST
5:30pm Mid-Dec. EST

MAGNITUDE is a measure of a star's brightness. The lower the number, the brighter the star

- 1st or brighter magnitude star
- 2nd magnitude star
- 3rd magnitude star
- 4th 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 2022

IN THE NOVEMBER/DECEMBER SKY

- | | |
|--|---|
| <p> Nov 1
First Quarter Moon near Saturn</p> <p>Nov 4
Moon near Jupiter</p> <p>Nov 6
Eastern Standard Time returns
(See <i>Celestial Highlights</i>)</p> <p> Nov 8
Full Moon
Total Lunar Eclipse (morning)
(See <i>Celestial Highlights</i>)
Mercury in conjunction with Sun</p> <p>Nov 8/9
Moon near Pleiades</p> <p>Nov 9
Moon near Aldebaran
Uranus is in opposition
(See <i>Celestial Highlights</i>)</p> <p>Nov 10/11
Moon near Mars
(See <i>Celestial Highlights</i>)</p> <p>Nov 13
Moon near Pollux</p> <p> Nov 16
Last Quarter Moon</p> <p>Nov 17
Moon near Regulus (morning)</p> <p>Nov 21
Moon near Spica (morning)</p> <p> Nov 23
New Moon</p> <p>Nov 28
Moon near Saturn</p> <p> Nov 30
First Quarter Moon</p> | <p>Dec 1
Moon near Jupiter</p> <p>Dec 6
Moon near Pleiades</p> <p> Dec 7
Full Moon near Mars
Mars at opposition
(See <i>Celestial Highlights</i>)</p> <p>Dec 10
Moon near Pollux</p> <p>Dec 13/14
Moon near Regulus</p> <p>Dec 14
Geminid Meteor Shower
(See <i>Celestial Highlights</i>)</p> <p> Dec 16
Last Quarter Moon</p> <p>Dec 21
Winter Solstice
(See <i>Celestial Highlights</i>)
Mercury at greatest elongation</p> <p> Dec 23
New Moon</p> <p>Dec 28
Venus near Mercury</p> <p> Dec 30
First Quarter Moon</p> |
|--|---|

CELESTIAL HIGHLIGHTS

Eastern Standard Time returns, November 6, 2:00 am – Set your clock back one hour on Saturday night, November 5.

Moon Pairings – Moon is near Saturn on November 1 and 28 and December 26. The Moon is near Jupiter on November 4 and December 1 and 28. The Moon passes by the Pleiades star cluster the nights of November 8 and 9 then passes by Mars the evenings of November 10 and 11. The Moon is again near the Pleiades on December 6 and near Mars on December 7.

Total Lunar Eclipse, November 8, 4:10am EST – The Full Moon will be eclipsed by the shadow of the Earth early on November 8. The eclipse begins at 3:03am when the Moon enters the outer part of Earth's shadow (the penumbra), and the Moon's brightness starts to dim about fifty minutes later when the Moon is deeper into the penumbra. At 4:10 am the Moon enters the inner part of Earth's shadow (the umbra) when the partial eclipse really takes shape as the Moon darkens. The eclipse reaches totality at 5:17am when 100% of the Moon's disk will lie in shadow. The Moon exits the umbra at 6:42am ending the total lunar eclipse. The partial eclipse ends at 7:42am but the moon will be below the horizon at that time. 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.

Planet Oppositions and Conjunctions with Sun – Opposition describes when an object appears opposite the sun in the sky as seen from Earth. Planets in opposition are visible all night. Uranus is in opposition on November 9. Mars is in opposition December 7. In contrast, conjunction means that two objects appear in the same place in the sky as seen from Earth. Planets in conjunction with the sun are not visible. Mercury is in conjunction with the sun on November 8.

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.

Greatest Elongation of Mercury – Since Mercury has an orbit inside of Earth's orbit it doesn't go through opposition. Instead, it goes through greatest elongation, where it is the farthest separation from the sun from our perspective. Mercury's greatest elongation occurs on December 21 after sunset.

Winter Solstice, Saturday, December 21 – 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:

Not visible, November After sunset, late December

Where:

Not visible, November Very low in West, late December

Constellation:

Sagittarius



VENUS

When:

Not visible, November After sunset, December

Where:

Not visible, November Low in West, December

Constellation:

Sagittarius



MARS

When:

Late night to dawn, November
All night, December

Where:

Northeast to West, November
East to Northwest, December

Constellation:

Taurus



JUPITER

When:

Evening sky to pre-dawn, November
Evening sky, December

Where:

Southeast to southwest

Constellation:

Pisces



SATURN

When:

Evening sky, November Early evening sky, December

Where:

South to Southwest, November to early December

Constellation:

Capricornus