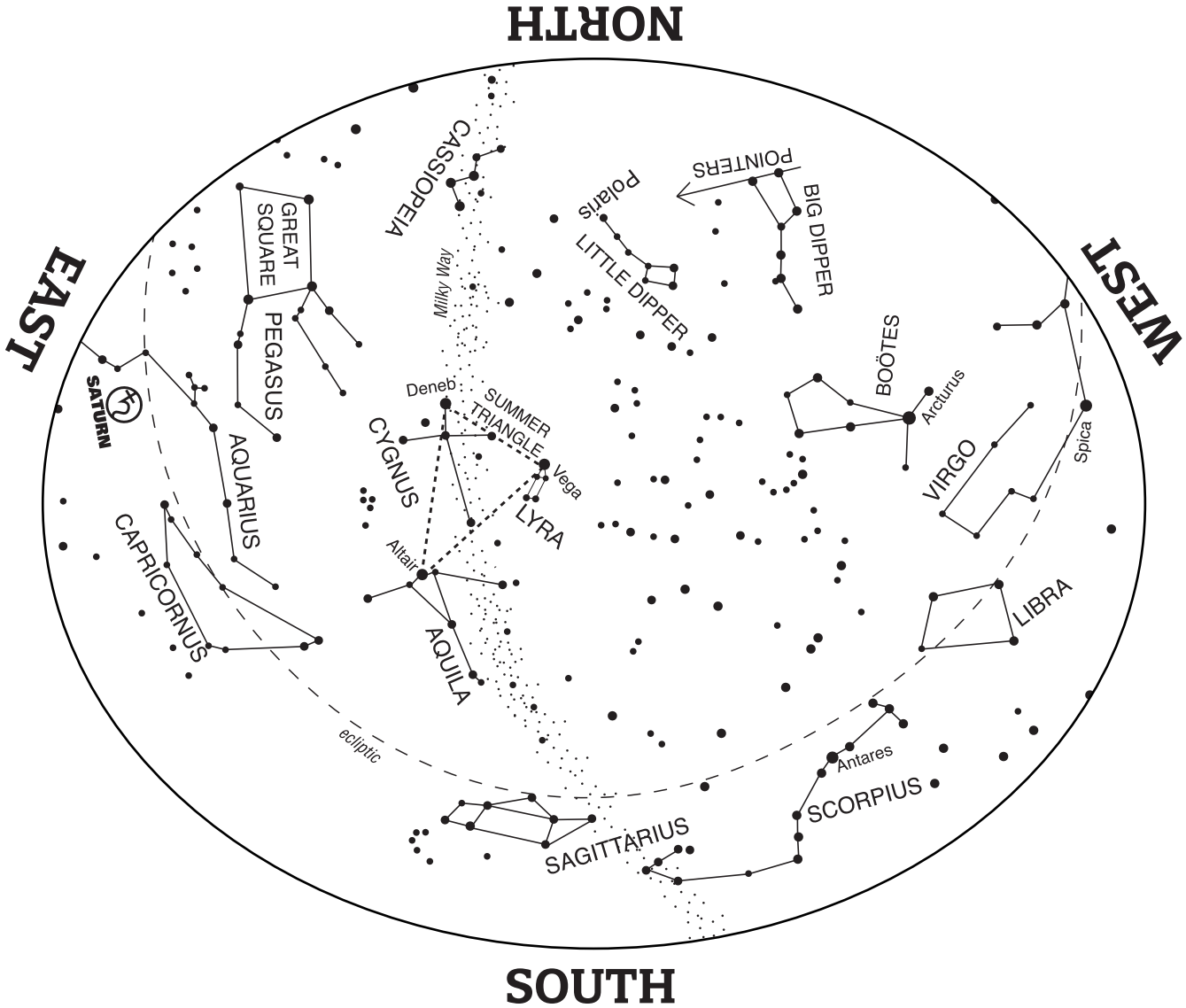


Starmap

JULY/AUGUST 2023



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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:
11:30pm Mid-July
9:30pm Mid-Aug.

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

JULY/AUGUST 2023

IN THE JULY/AUGUST SKY

July 1

Superior conjunction of Mercury
Venus near Mars
(see *Celestial Highlights*)
Moon near Antares

**July 3**

Full Moon

July 6

Earth at aphelion
(see *Celestial Highlights*)

July 7

Moon near Saturn (morning)

**July 9**

Last Quarter Moon

July 10

Mars near Regulus

July 11/12

Moon near Jupiter (morning)

July 13

Moon near Pleiades (morning)

July 15

Venus near Regulus

**July 17**

New Moon

July 20

Moon near Mars

July 24

Moon near Spica

**July 25**

First quarter Moon

July 26

Mercury near Venus

July 28

Moon near Antares
Mercury near Regulus

**Aug. 1**

Full Moon

Aug. 2

Moon near Saturn

**Aug. 8**

Last Quarter Moon near Jupiter
(morning)

Aug. 9

Moon near Pleiades (morning)
Mercury at greatest elongation

Aug. 12

Annual Perseid meteor shower
(see *Celestial Highlights*)
Mercury near Mars

Aug. 13

Inferior conjunction of Venus

Aug. 13/14

Moon near Pollux (morning)

**Aug. 16**

New Moon

Aug. 18

Moon near Mars

Aug. 20/21

Moon near Spica

**Aug. 24**

First Quarter Moon near Antares

Aug. 27

Saturn in opposition
(see *Celestial Highlights*)

**Aug. 30**

Full Moon near Saturn

CELESTIAL HIGHLIGHTS

Earth at Aphelion, July 6 – Aphelion is a planet's farthest point from the sun in its annual elliptical orbit. This year, Earth reaches aphelion on July 6, with a distance of 94,508,169 miles making it about 3,000,000 miles farther from the sun than perihelion, when we are at our closest distance in January. Despite the variable distance between the Earth and the sun, changing temperatures and seasons are caused by the tilt of the Earth.

Planet Oppositions and Conjunctions with Sun – The astronomical term opposition describes when an object appears opposite the sun in the sky as seen from Earth. Planets at opposition are visible all night. Saturn goes into opposition on August 27. 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 July 1 and Venus is in conjunction with the sun on August 13.

Perseids Meteor Shower peaks August 12 – While the peak occurs on August 12, some meteors may be visible July 17 - August 24. Look to the north-eastern sky after dark to watch for Perseid meteors.

Planet Pairings – In the early evening, Venus and Mars start July close to each other with Mars closer to the bright star Regulus. Mars passes closest to Regulus the evening of July 10 and moves past Regulus after that. Venus tries to catch Regulus but is at its closest on July 15. Mars is to the upper left of Regulus and Venus is below Regulus. A thin crescent Moon is to the right of Venus on July 19 and will be near Mars on July 20. Mercury is near Venus early on the evening of July 26.

Moon and Planet groupings – The Moon is near Saturn on the morning of July 7. The morning of July 11, the Moon is above Jupiter in the East and is below Jupiter on July 12. Early on the morning of July 13, while it is still dark, a beautiful crescent Moon is seen below the Pleiades. The Moon is near Antares on July 28. Late at night on August 2, the Moon and Saturn rise together. They stay together through the night and will both be toward the Southwest at dawn. The Moon is near Jupiter on the morning of August 8. The next morning the Moon is near the Pleiades cluster. The crescent Moon is near Pollux on the mornings of August 13 and 14. The Moon is back in the evening sky as a crescent very low in the West near Mars on August 18. The Moon passes Spica on the evenings of August 20 and 21 and is close to Antares on August 24. The Full Moon rises with Saturn on August 30.

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

**MERCURY****When:**

Evening sky,
last half July through first
half August

Where:

Very low in West,
last half July
Very low in West,
first half August

Constellation:

Gemini, Cancer, Leo

**VENUS****When:**

After sunset, July
Before sunrise,
last week of August

Where:

Low in West, July
Low in East, last week of
August

Constellation:

Leo, Cancer

**MARS****When:**

Early evening

Where:

Low in West

Constellation:

Leo, Virgo

**JUPITER****When:**

Before dawn, July
Before midnight to dawn,
August

Where:

East to Southeast, July
East to South, August

Constellation:

Aries

**SATURN****When:**

Late evening to dawn

Where:

Southeast to southeast

Constellation:

Aquarius