## Visible planets

Mercury moves out from the opposite side of the Sun, superior conjunction, and into the evening skies where it will be visible through much of the month of August as an "evening star."

Venus will remain visible as an "evening star" for part of July, but gradually, by the middle of August, Venus will move into inferior conjunction, between the Earth and the Sun. Watch for Venus to reappear as a "morning star" this fall.

Our Moon, just past full phase, will be at its closest distance from the Earth when it reaches a perigee of 222,022 miles [ $357,310 \mathrm{~km}$ ] on August 2nd. Call it a "supermoon"!


Mars will be visible but low over the southwest horizon at sunset. Over the next few months, Mars will become less bright, as the distance between the Earth and Mars has been steadily increasing since the Red Planet's opposition with the Earth last fall.

Dwarf planet Ceres will be too dim to be seen without optical assistance; however, its position in the constellation Virgo the Harvest Maiden may be found on the nights of July 23rd and August 20th when the waxing crescent Moon will be passing by this Dwarf Planet.

Jupiter ends the summer months, rising late at night near midnight local time and shining very
brightly near the stars of Aries the Ram. However, as the Earth revolves, Jupiter will gradually rise earlier in the evening.

Saturn rises before midnight local time and is still moving in retrograde motion across the stars of Aquarius the Water Bearer. This ringed planet reaches opposition toward the end of August, and during that time the northern hemisphere of Saturn will be tilted toward us, offering us a look at the topside of the rings.

## July

01 Venus-Mars conjunction
Waxing gibbous MoonAntares conjunction

02 Moon at southernmost declination: $27.8^{\circ} \mathrm{S}$

03 Full Moon
04 Moon at perigee: 223818 miles [360,200 km]

06 Earth at aphelion: 1.0167 AU $\{94,508,169$ miles; 152,096,155 km]

07 Waning gibbous MoonSaturn conjunction

09 Last quarter Moon
10 Mars-Regulus conjunction
Waning crescent Moon at ascending node

11 Waning crescent MoonJupiter conjunction

13 Waning crescent Moon near the Pleiades

15 Moon at northernmost declination: $27.8^{\circ} \mathrm{N}$

17 New Moon
19 Waxing crescent MoonVenus conjunction

Waxing crescent MoonMars conjunction

20 Moon at apogee: 252,463 miles [406,300 km]

Waxing crescent MoonMars conjunction

24 Waxing crescent MoonSpica conjunction

25 Moon at descending node
First quarter Moon
27 Mercury-Venus conjunction
28 Delta aquarid shower: $\mathrm{ZHR}=$ 20

Waxing gibbous Moon-
Antares conjunction
30 Moon at southernmost declination: $27.9^{\circ} \mathrm{S}$

August
01 Full Moon
02 Moon at perigee: 222,016 miles [357,300 km]

03 Waning gibbous MoonSaturn conjunction

06 Waning gibbous Moon at ascending node

08 Waning gibbous MoonJupiter conjunction Last Quarter Moon

09 Waning crescent MoonPleiades conjunction

Mercury at greatest eastern elongation: $27.4^{\circ} \mathrm{E}$

12 Moon at northernmost declination: $28^{\circ} \mathrm{N}$

13 Mercury-Mars conjunction Perseid meteor shower:

ZHR = 90
Venus at inferior conjunction

Waning crescent MoonPollux conjunction

16 New Moon
Moon at apogee: 252,650 miles [406,600 km]
18 Waxing crescent MoonMars conjunction
21 Waxing crescent MoonSpica conjunction Moon at descending node

24 Last quarter Moon
Waxing gibbous MoonAntares occultation

26 Waxing gibbous Moon at southernmost declination: $28.1^{\circ} \mathrm{S}$

27 Saturn at opposition
30 Moon at perigee: 221,954 miles [357,200 km] Moon-Saturn conjunction Full Moon

