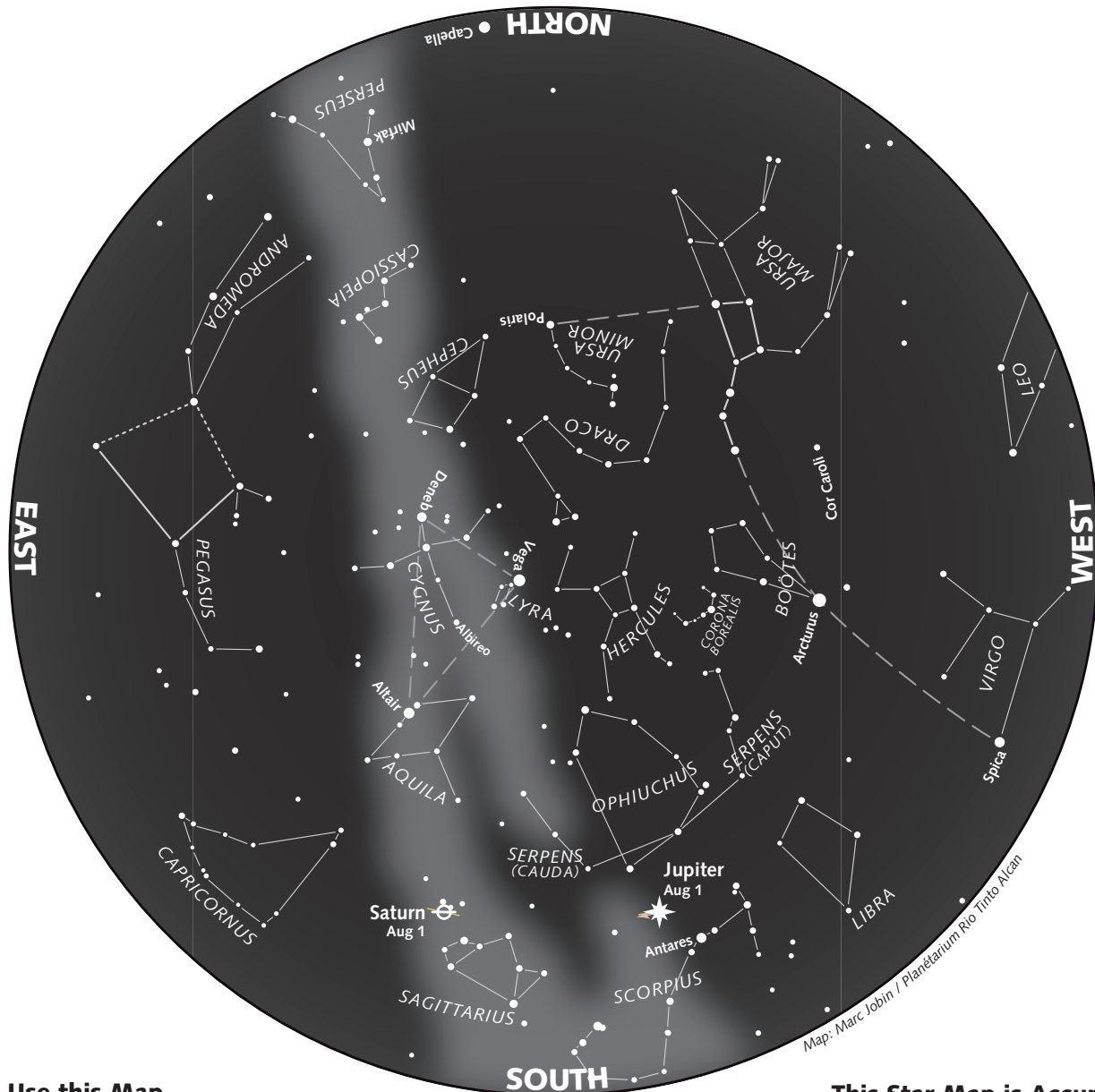


The Starry Sky — Summer 2019



How to Use this Map

The above map represents the night sky as it appears at the indicated times, and remains usable several hours before and after.

Hold the map up to the sky in front of you and turn it so the direction you are facing appears at the bottom. Lines identify the constellations. The light-coloured area outlines the Milky Way.

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This Star Map is Accurate on...

(Eastern Daylight Time)

June 21 at 1 a.m.

July 6 at midnight

July 21 at 11 p.m.

August 6 at 10 p.m.

August 21 at 9 p.m.

September 6 at 8 p.m.



The Sky This Summer

All eyes are on Jupiter and Saturn, the “stars” of our summer evenings. Mercury makes a fine appearance in the morning sky this August, but Venus and Mars get swallowed up in the Sun’s glare.

Jupiter and Saturn dominate the night sky

Jupiter is THE “star” of our summer evenings. As the sky begins to darken, the brilliant giant draws our attention above the southern horizon where it culminates at twilight. Once the night sets in, you’ll spot an orange star slightly below and to its right: Antares, the brightest star in Scorpius.

Jupiter is currently in the southernmost leg of its celestial journey, in the constellation Ophiuchus, where the Sun passes through in November and December. Just like the Sun at the end of the year, Jupiter doesn’t rise very high in the sky, and this interferes with telescope viewing because light from the planet has to travel much farther through Earth’s atmosphere to reach our eyes. The giant planet also sinks into the southwestern horizon with each passing hour, setting at around 3 a.m. in early July, around 1 a.m. in early August, and around 11 p.m. in early September.

So, grab a telescope and check Jupiter out as soon as night falls, when the planet is still at its highest. Even a small telescope will reveal the main cloud bands of this giant ball of swirling gas, as well as its four brightest moons, first discovered by Galileo 410 years ago. A truly magnificent display!

As Jupiter descends in the southwest, **Saturn** takes the spotlight. The much-fainter ringed planet lies in the eastern part of the constellation Sagittarius, following a path similar to that of Jupiter above the south-

ern horizon, but two hours later. As was the case with Jupiter, Saturn’s low altitude negatively affects telescopic observations. But if you point your instrument at the planet when it culminates due south, you’ll be rewarded with a great view of its majestic rings, which are tilted about 24 degrees toward Earth this summer.

Saturn is in opposition on July 9. For a few days around this date, the planet is visible all night long: It appears low in the southeast after sunset, culminates in the south at about 1 a.m., and vanishes in the southwest with the rising glow of daybreak. As summer unfolds, Saturn appears higher in the south-southeastern sky at nightfall and culminates earlier and earlier each evening.

The Moon passes close to the planetary duo for several nights every month this summer, but some encounters are worth mentioning. For example, **on the evening of July 13**, the waxing gibbous Moon appears 3 degrees to the left of Jupiter at twilight and then moves away throughout the night. The almost-full Moon gradually sidles up to Saturn **on the night of July 15-16** and can be seen barely 1 degree below the ringed planet in the first light of dawn. **On the evening of August 9**, the waxing gibbous moon lies less than 2 degrees above Jupiter. Then, **during the night of August 11-12**, it approaches less than 2½ degrees below Saturn when they’re about to set around 2 a.m. Finally, **on the evening of September 5**, the first quarter Moon comes to within 3½ degrees of Jupiter as the pair set around 11:30 p.m.

Mercury at dawn

Mercury is barely visible during the first summer evenings, only a few degrees to the left of Mars. Binoculars will help you locate the duo in the twilight glow, very low on the west-northwestern horizon, one hour after sunset. Mercury sinks ever lower and disappears in the Sun’s glare in early July.

The tiny planet then makes a very good showing in the morning sky from August 4 to 29. Look for it above the east-northeastern horizon 30 to 45 minutes before sunrise. Too dim before August 4, Mercury is much brighter by the end of this period, but by then it dips too low on the horizon to be seen easily. The prime viewing window extends from August 10 to 20.

A poor year for the Perseids

In 2019, the “traditional” peak of Perseid activity is expected between 10 p.m. on August 12 and 11 a.m. on August 13, when Earth passes closest to the dust stream from comet Swift-Tuttle.

Unfortunately, the full Moon on August 15 will seriously interfere with meteor-watching during peak night. The best option is to observe the Perseids near the end of the few nights that lead up to that maximum, after the Moon sets and before dawn, but with an important penalty: The number of potentially visible meteors drops by half for each 24-hour period that separates us from the time of peak activity. For more details and viewing tips, see

espacepourlavie.ca/en/perseids

Mars on the far side of the Sun

Last chance to catch **Mars** at twilight for the rest of 2019! The first evenings of summer will see the Sun closing in on the red planet. On June 21, one hour after sunset, Mars will be less than 5 degrees above the west-northwestern horizon. The slightly brighter Mercury appears a little higher and to the left.

But the red planet loses altitude with each passing evening, and since it’s currently at its dimmest (mag. +1.8), spotting it in the glow of the setting Sun becomes increasingly trickier. Mars disappears completely in July and is in solar conjunction on September 2, on the other side of the Sun, at 2.675 astronomical units from Earth (one astronomical unit is roughly the mean distance between the Earth and the Sun, or about 149.6 million kilometres).

Venus hidden behind the Sun

During the early days of summer, **Venus**—despite its exceptional glow—is barely visible low above the northeastern horizon in the half hour before daybreak. In fact, it draws ever closer to the Sun and is completely lost in our star’s brilliance around mid-July. After it passes behind the Sun (superior conjunction) on August 14, Venus gradually emerges at twilight toward the end of September, low on the western horizon.

Clear skies!

Research and text: **Marc Jobin**

Seasonal Milestones

The **summer solstice** occurs on June 21, 2019 at 11:54 a.m. EDT, and the **autumn equinox** takes place on September 23 at 3:50 a.m. Summer will last 93 days 15 hours 56 minutes.

Earth reaches **aphelion**, the point in its orbit farthest from the Sun, on July 4 at 6:11 p.m. The Earth-Sun distance will be 152 104 285 kilometres.

Phases of the Moon

(Eastern Daylight Time)

First quarter

June 10 at 1:59
July 9 at 6:55
August 7 at 13:31
September 5 at 23:10

Full moon

June 17 at 4:31
July 16 at 17:38
August 15 at 8:29
September 14 at 0:33

Last quarter

June 25 at 5:46
July 24 at 21:18
August 23 at 10:56
September 21 at 22:41

New moon

July 2 at 15:16
July 31 at 23:12
August 30 at 6:37
September 28 at 14:26