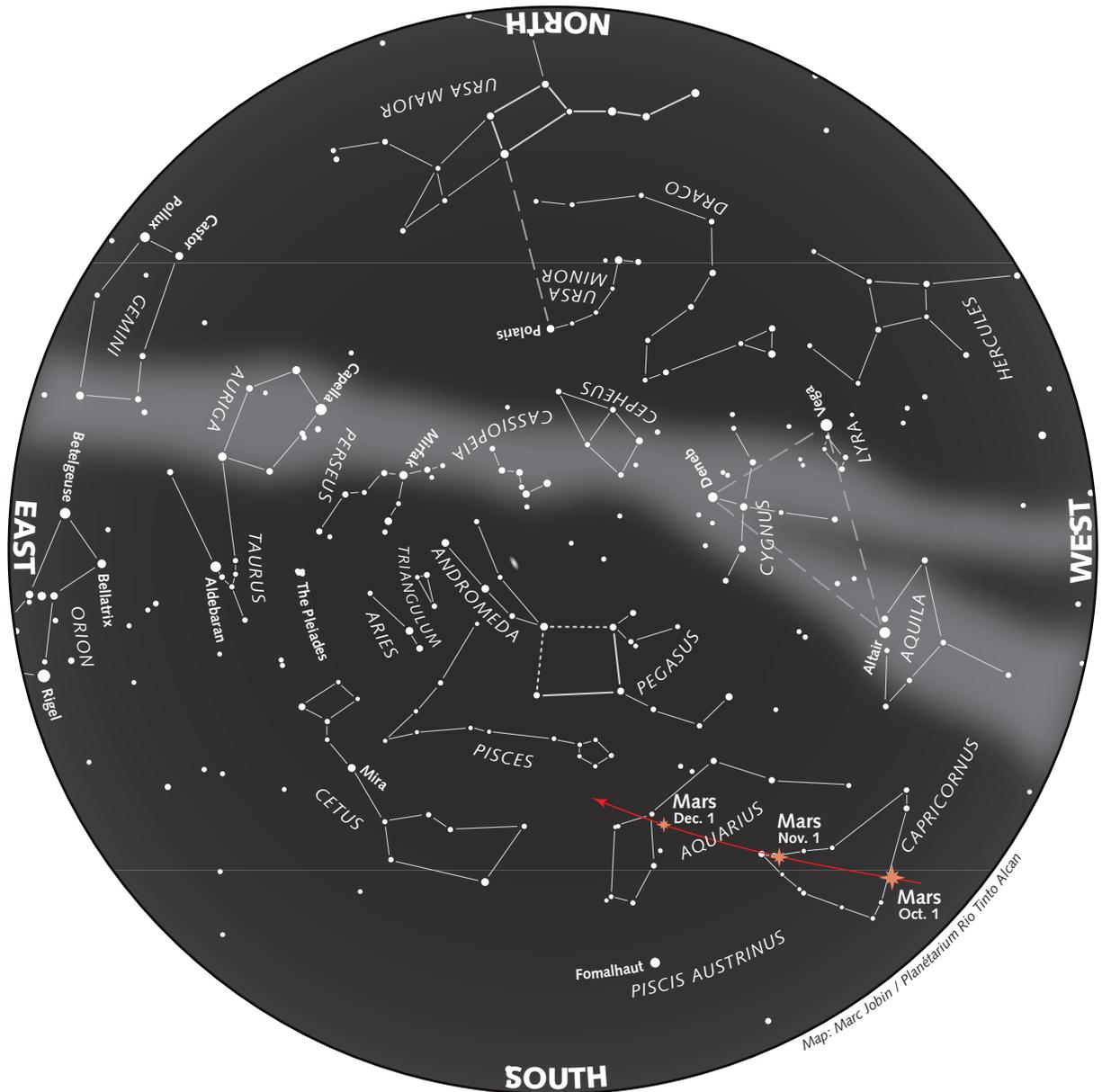


The Starry Sky — Autumn 2018



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, except where mentioned otherwise)

September 21 at 1 a.m.

October 6 at midnight

October 21 at 11 p.m.

November 6 at 9 p.m. EST

November 21 at 8 p.m. EST

December 6 at 7 p.m. EST

The Sky This Autumn

Get ready for a changing of the guard as the planets that perked up our summer vanish one by one at twilight. By the very end of fall, three planets will hang in the sky at dawn, but only Mars will continue to shine in the evening.

The opposition of Mars comes to an end

The exceptional opposition that Mars had this summer is now over. The planet gradually moves away from Earth, and given this growing distance, its apparent size shrinks (its diameter is less than 15 arc seconds around October 10 and less than 10 arc seconds after November 21). To put things into perspective, remember that the planet's apparent disc was greater than 24 arc seconds back in July.

As the red planet moves away, it also grows dimmer, falling below the symbolic threshold of zero magnitude around December 2. But Mars remains a visually striking body among constellations lacking bright stars: it drifts quickly eastward, into Capricornus till November 10, then into Aquarius, and finally into Pisces as of December 21.

Throughout fall, the planet is found roughly to the south at dusk, about an hour and a half after sunset. This is the best time to observe it through a telescope since it's at its highest point in the sky, and still fairly close to Earth in early fall. Our next big Martian rendezvous isn't till October 2020.

On the evenings of October 17 and 18, the waxing gibbous Moon draws near Mars, the duo culminating in the south around 8 p.m. **On the evening of November 15**, the first quarter Moon comes within 2 degrees of Mars, the two bodies culminating in the south around 6:30 p.m. when they're still 3 degrees apart. **On the evening of December 14**, the first quarter Moon lies less than 4½ degrees below Mars, the duo culminating in the south around 5:30 p.m.

Seasonal Milestones

The **autumn equinox** takes place on September 22, 2018 at 9:54 p.m. EDT, and the **winter solstice** occurs on December 21 at 5:23 p.m. EST. Autumn will last exactly 89 days 20 hours 29 minutes.

We return to **Eastern Standard Time** early on the morning of Sunday, November 4: Clocks are set back one hour.

Phases of the Moon

(Eastern Daylight Time, except * = Standard Time)

New moon		First quarter	
September 24 at 22:52	October 2 at 5:45	October 24 at 12:45	October 31 at 12:40
November 23 at 0:39*	November 29 at 19:19*	December 22 at 12:49*	December 29 at 4:34*
Full moon		Last quarter	
October 8 at 23:47	October 16 at 14:02	November 7 at 11:02*	November 15 at 9:54*
December 7 at 2:20*	December 15 at 6:49*	January 5 at 20:28*	January 14 at 1:45*

Last glimpse of Saturn

If you still want to observe Saturn through a telescope this year, act fast because viewing conditions will deteriorate rapidly. In early fall, you can spot Saturn at twilight about 20 degrees above the south-southwestern horizon. The ringed planet then descends toward the southwestern horizon where it vanishes less than three hours later. As fall progresses, however, Saturn appears lower and lower in the sky at nightfall and sets earlier and earlier. By late October, Saturn appears only about 15 degrees above the horizon after sunset, and only about 10 degrees by mid-November. The planet is completely lost in the glow of the setting Sun during the first half of December. On January 2, the planet is in conjunction, on the opposite side of the Sun from Earth. It reappears at dawn above the southeastern horizon near the end of the month.

On October 14 at twilight and in the evening, the crescent Moon moves within 1½ degrees of Saturn, the duo setting in the southwest just after 9:30 p.m. **On November 11 at twilight and in the evening**, the thin crescent Moon is low in the southwest and lies 3 degrees to the left of Saturn, the duo setting by 8 p.m. **On December 8 at twilight**, the thin crescent is just 4 degrees to the right of Saturn on the southwestern horizon, but given the low height and bright sky, the duo is very hard to spot.

Jupiter in the glow of the Sun

This fall, Jupiter is initially found very low on the southwestern horizon at nightfall. As the season kicks off, the giant planet shines at about 10 degrees high a half-hour after sunset and is visible for only an hour before dipping below the horizon. The observation window gradually closes as the weeks go by. Jupiter appears lower and lower in the twilight glow and finally vanishes completely in the first half of November. On November 26, it's in solar conjunction, on the opposite side of our star. The planet reappears at dawn in the second half of December, and as the year draws to a close, it's clearly visible above the southeastern horizon one hour before sunrise.

On October 11 at twilight, the crescent Moon shines less than 3 degrees to the upper right of Jupiter, very low on the southwestern horizon. **On November 8 at twilight**, the crescent Moon lies once again 3 degrees above Jupiter on the southwestern horizon, but given the low height and bright sky, the duo is very hard to spot. Finally, **on the morning of December 21**, Mercury (magnitude -0.4) moves within 1 degree of Jupiter (magnitude -1.8). They can be seen low in the southeast 45 minutes before sunrise.

Venus shines at dawn

Venus has shone as the **Evening Star** since February, but this period of visibility ends in the early days of fall. In the first days following the September equinox, the planet is observable only with great difficulty and can be spotted on the southwestern horizon about 15 minutes after sunset. Binoculars can help you locate it in the still-bright sky, which must be perfectly clear in this direction. Venus is completely lost in the twilight glow around early October, almost one month before its **inferior conjunction** on October 26, during which the planet passes 6 degrees to the south of the Sun.

But in the early days of November, Venus reappears as the **Morning Star** and soon climbs higher in the sky. By mid-December, the planet rises four hours before the Sun and can be found at over 25 degrees above the southeastern horizon at the break of civil dawn (about 40 minutes before sunrise). The planet's glow is at its brightest on November 29 when Venus shines at magnitude -4.9.

On the morning of November 6, a half-hour before sunrise, the thin crescent Moon lies 9 degrees to the left of Venus above the east-southeastern horizon. **On December 3 at dawn**, between 120 and 45 minutes before sunrise, the crescent Moon shines 6 degrees above Venus in the southeast. The next morning, **on December 4**, the Moon has moved and now lies 8 degrees to the lower left of the Morning Star.

Mercury appears in the morning

Mercury, the closest planet to the Sun, always sticks close to our star. Favourable conditions for spotting it occur only a few times a year, each time for a few weeks. The tiny planet graces us with a very good apparition in the morning sky in the late fall, **from December 5 to the early days of January**. Look for it above the southeastern horizon a half-hour before sunrise. On December 15, Mercury reaches its maximum distance from the Sun, 21 degrees to the west of our star. Too dim before December 5, the planet is much brighter by the end of this period. However, it becomes harder to make out in the new year because it dips too low on the horizon. **On the morning of December 5**, the thin crescent Moon lies 5 degrees above Mercury. **On the morning of December 21**, Mercury (magnitude -0.4) moves within 1 degree of Jupiter (magnitude -1.8). The duo can be seen low in the southeast 45 minutes before sunrise.

Clear skies!

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