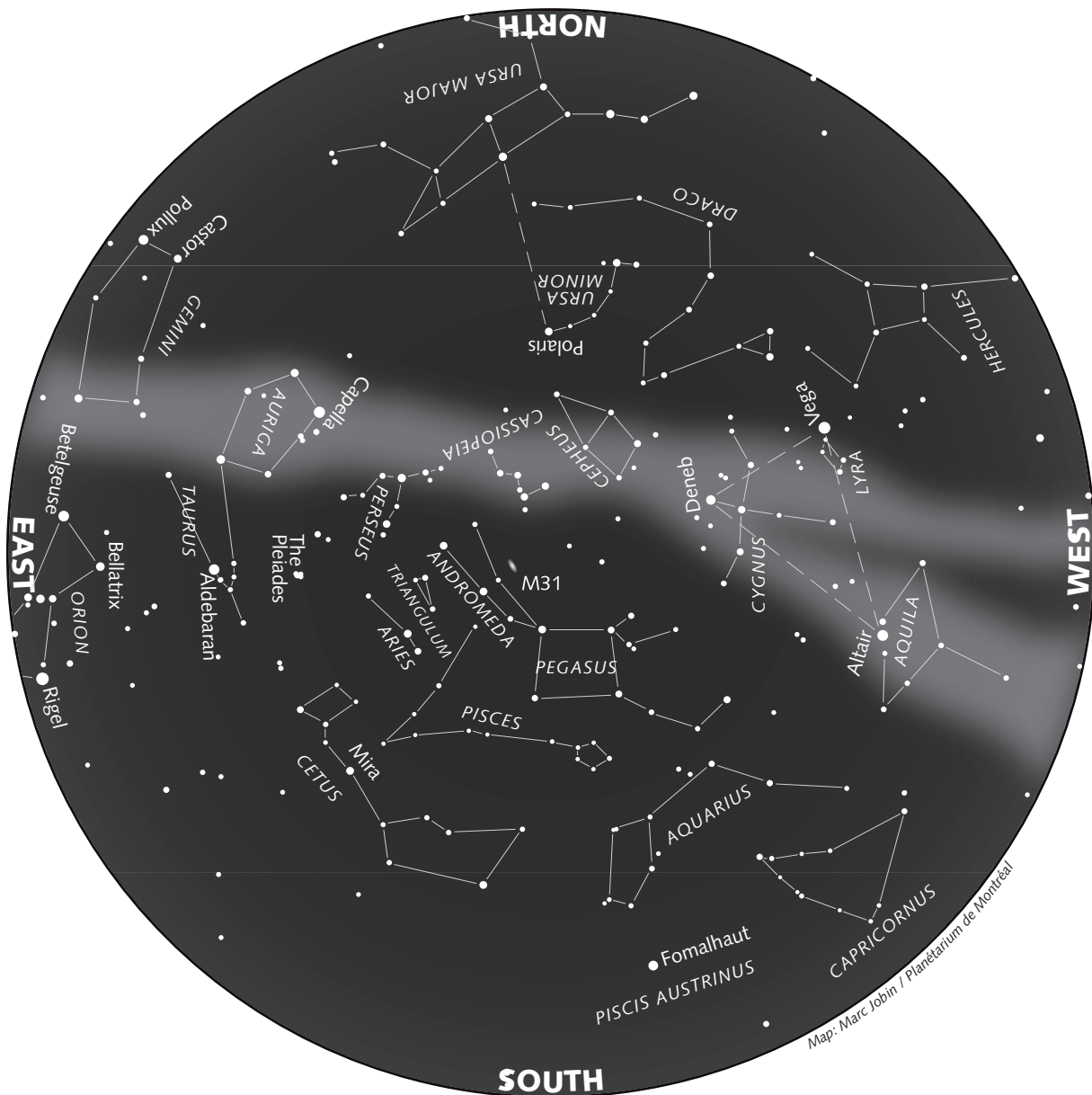


The Starry Sky — Autumn 2006



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.

Visit our Website: www.planetarium.montreal.qc.ca

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

Three bright planets will spend part of the season hidden behind the Sun. Despite this apparent scarcity, fall still has some pleasant planetary surprises in store.

Saturn shines in the morning

This fall, **Saturn** will be visible mainly during the second half of the night. The ringed planet appears progressively higher at dawn, becoming an interesting target for telescopes once more. By the beginning of November, Saturn rises just before midnight; and at the start of December, the planet will be seen rising above the eastern horizon before evening ends. However, the best conditions for viewing Saturn will prevail throughout the winter.

The Moon appears near Saturn on the mornings of October 16 and November 13, but a really spectacular rendezvous will occur on the night of December 9 to 10. At around 22:00 on December 9, when the two objects appear above the eastern horizon, the Moon will be about 3½ degrees above Saturn. Then, over the following hours, the Moon's rapid motion relative to the planets and stars will become evident as Earth's only natural satellite gradually approaches Saturn. At dawn on December 10, at about 6:45, the duo will appear high in the southwest, separated by a scant quarter-degree.

Mercury for early risers

On the afternoon of November 8

Seasonal Milestones

The **autumn equinox** occurs on September 23, 2006 at 00:03 EDT; the **winter solstice** will arrive on December 21 at 19:22 EST. Autumn 2006 will last exactly 89 days 20 hours 19 minutes.

The switch to **Eastern Standard Time** takes place on the night of Sunday, October 29: Clocks are set back one hour.

Phases of the Moon

(Eastern Daylight Time, except * = Standard Time)

Last quarter	New moon
Sept. 14 at 7:15*	Sept. 22 at 7:45*
Oct. 13 at 20:26*	Oct. 22 at 1:14*
Nov. 12 at 12:45	Nov. 20 at 17:18
Dec. 12 at 9:32	Dec. 20 at 9:01
First quarter	Full moon
Sept. 30 at 7:04*	Oct. 6 at 23:13*
Oct. 29 at 16:25*	Nov. 5 at 7:58
Nov. 28 at 1:29	Dec. 4 at 19:25
Dec. 27 at 9:48	Jan. 3 at 8:57

(Eastern Time) Mercury will slip between the Earth and Sun: For several hours the tiny planet will appear in silhouette against our daytime star. A few days following this rare transit (see box for details) **Mercury** will distance itself sufficiently from the Sun as to be visible above the southeast horizon at dawn. During the last week of November and the first week of December, early birds will get an excellent opportunity to see the elusive planet in its best apparition of the year.

Around December 7, brilliant Jupiter enters the scene and appears slightly lower than Mercury. The following day, and the day after, the separation between the two planets diminishes noticeably: **On the morning of December 10**, 45 minutes before sunrise, Mercury and Jupiter appear just 18 arc minutes apart, about 4 degrees above the southeast horizon. Mars (visible in binoculars) is located less than one degree to their right. This is the most compact triple conjunction during the period between 1980-2050! On the mornings that follow, Mercury plunges back down toward the horizon and disappears in the Sun's glare by mid-December. Meanwhile Jupiter continues to rise.

Jupiter plays solar hide and seek

As autumn begins, Jupiter remains visible close to the west-southwest horizon at twilight — but not for long. The giant planet gradually disappears in the Sun's glare during October. Jupiter is in conjunction with the Sun on November 21 and is unobservable for several weeks. The planet will gradually reappear in December, but in the east-southeast at dawn. **On December 10**, about 45 minutes before sunrise, Jupiter is less than one third of a degree from Mercury (see above).

Venus returns in the evening

Venus is in superior conjunction on October 27: On that day, it passes behind the Sun. As a result, the brightest of all planets will be masked by the Sun's glare for most of the fall. Venus will reappear in December at twilight: Look for it low on the southwest horizon

Mercury passes in front of the Sun

On November 8, Mercury will undergo a rare solar transit, an event that occurs just 13 times per century on average. Smaller than Venus, and farther from Earth, Mercury is harder to see against the Sun. To succeed, you'll need a telescope with sufficient magnification, and a special solar filter designed for safe solar observing. It's essentially the same setup used to observe sunspots.

From Montreal, the first two contacts — the point when Mercury's disk touches the edge of the Sun, and the instant when it is completely silhouetted in front of the Sun — will occur precisely at 14:12:22 and 14:14:15 (Eastern Standard Time) respectively. The Sun will be just 19 degrees above the horizon.

Mercury will appear like a tiny black dot moving across the Sun's disk — a transit that you'll be able to follow as the Sun approaches the horizon. Mid-transit occurs at 16:41, but by then the Sun will have already set (sunset in Montreal is at 16:30). To see the event from beginning to end (which occurs at 19:10 EST) you'll need to be on the west coast, or on an island in the Pacific...

about thirty minutes after sunset. What's the earliest date that you can find it? It might be challenging to spot it against a bright sky, but don't get discouraged. Conditions for observing Venus improve quickly starting in January, and the Evening Star will be truly spectacular this winter and most of the spring.

Mars behind the Sun

Like Venus and Jupiter, **Mars** is on the far side of the Sun this fall (conjunction is on October 23) and remains unobservable for several weeks. The red planet gradually reappears at the beginning of December, low in the southeast at dawn. On December 10, Mars is less than a degree from Mercury and Jupiter; but it is much fainter: You'll probably need binoculars to see it in the glow of daybreak.

Happy observing!

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