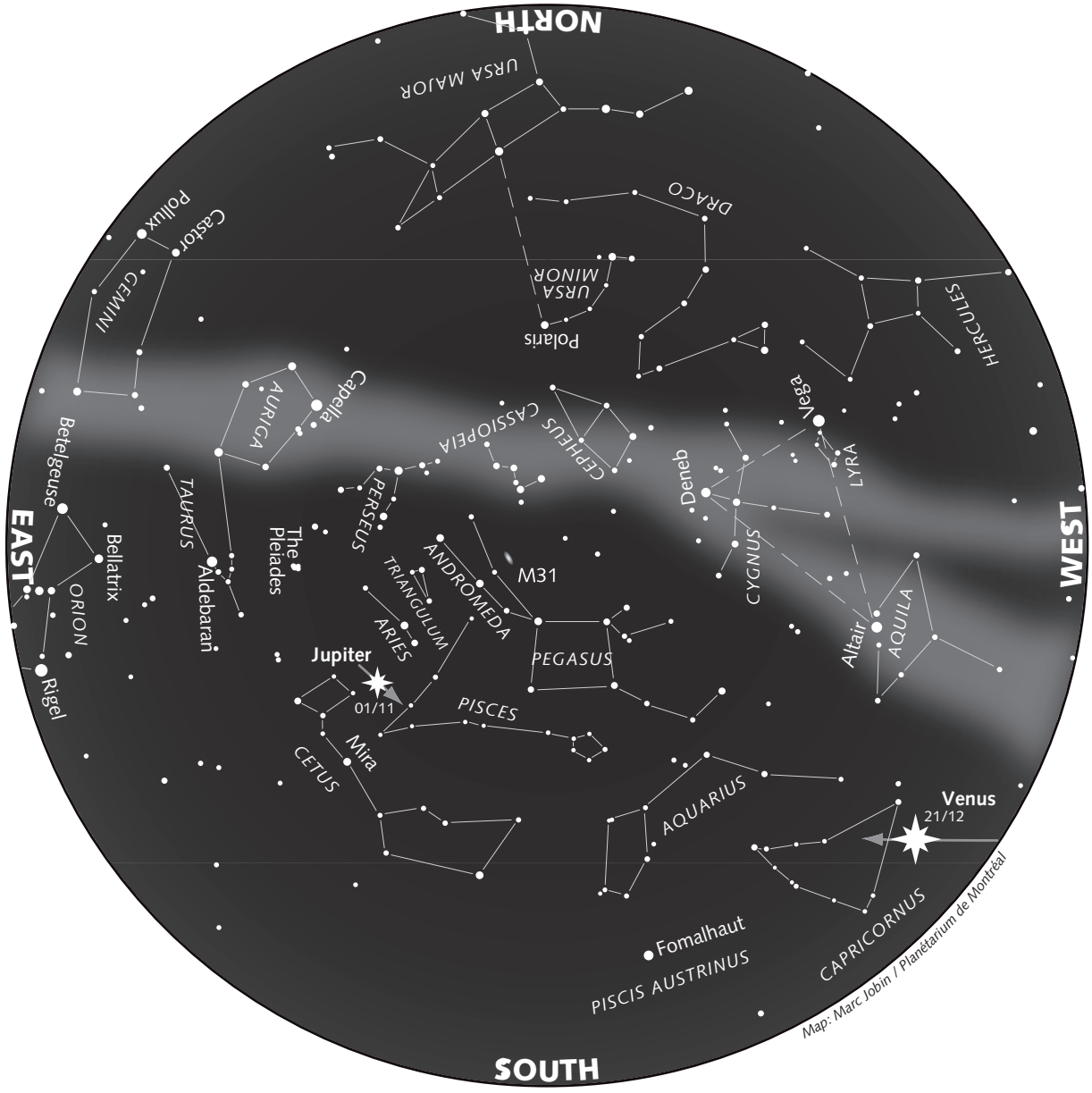
The Pocket Planetarium ★

Volume 15
Number 4
Autumn 2011

Astronomical Information Newsletter of the Planétarium de Montréal

The Starry Sky — Autumn 2011



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: 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

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The Sky This Autumn

The night belongs to Jupiter over the coming months, since the giant planet will be visible from dusk to dawn. As well, Venus makes a gradual return to the evening sky, while Mars asserts its presence during the latter half of the night.

Jupiter rules the night

At the end of September, after nightfall, a lone brilliant object can be seen shining above the eastern horizon: It's the planet **Jupiter,** which arrives at opposition on the evening of October 28 in the constellation of Aries. As autumn begins, you'll have to wait until midnight for Jupiter to rise high enough for satisfactory telescopic observations. Detailed views of its multiple cloud bands, and the never-ending ballet of its brightest moons, are sure to captivate. Happily, over the coming weeks, the optimum window of observation arrives progressively earlier in the evening. At the end of October, Jupiter is already 45 degrees above the southeast horizon by 11:00 p.m.: It reaches the same height by 8:00 p.m. around mid-November, and around 6:00 p.m. in December. The giant planet becomes visible above the eastern horizon at twilight in November and December.

The gibbous moon will be near Jupiter on the nights of October 12 to 14; November 8 to 10; and December 6 to 7.

Venus returns at twilight

Venus moved behind the Sun in mid-August; it gradually emerged from the Sun's glare a few weeks later; and this October, it reappears discretely in the evening sky. Search the west-southwest horizon 15 minutes after sunset and you should see Venus piercing the glow of twilight with its brilliance. Fortunately, the planet gains altitude as it gradually moves away from the Sun. In November, Venus is much easier to spot, and in December, it can be found without effort in the southwest after sunset. However, Venus will truly take its rightful place as the Evening Star over the course of this coming winter.

For several days, Venus serves as a guide for locating the planet Mercury: From the end of October to mid-November, the tiny planet is scarcely two degrees below the Evening Star. As well, look for the crescent moon to appear near Venus on the evenings of October 28 and November 26. Viewed against the colours of twilight, these celestial concurrences always provide magical scenes.

Encounters with Mars

The opposition of **Mars,** due at the end of winter, is still several months away. This autumn, the Red Planet remains too far and too small to provide interesting telescopic views. Essentially, Mars is visible during the latter half of the night, and despite everything, the planet manages to take part in some interesting encounters as it passes rapidly among the constellations.

The first of these encounters will occur **during the night of September 30 to October 1,** when Mars will pass in front of the Beehive star cluster (M44), in the constellation of Cancer. A small optical instrument (binoculars or, better yet, a small telescope) is required to observe the scene at its fullest — a tiny orange disk against a distant group of bluish stars. Around 3:00 a.m., the planet and star cluster will be about 15 degrees above the eastern horizon: They will climb to nearly 45 degrees in the east-southeast by 6:00 in the morning. By then, the light of dawn will be too pronounced for continued observation, but just an hour or two is all it takes to observe Mars' movement against the background stars.

Next, Mars moves toward the constellation of Leo: **From November 8 to 13** it passes within two degrees of Regulus. Once again, notice the colour contrast between the planet and the star: Mars has an orange hue, while Regulus shines a brilliant bluish-white. Look for the lunar crescent near Mars on the mornings of September 23, October 21, November 19 and December 17.

Saturn at night's end

Saturn is not visible as autumn begins; in fact, the ringed planet is behind the sun (conjunction) on October 13. However, it quickly emerges from the sun's glare and at the beginning of November it reappears low on the east-southeast horizon at dawn. In December, Saturn is easy to spot in the southeast and is high enough above the horizon to allow for good telescopic observations.

In the morning sky, Saturn forms a remarkable duo with Spica, the brightest star in the constellation of Virgo: They are similar in brightness, but the star's bluish tint contrasts with Saturn's creamy white tone. From October 25 to December 7, the separation between the two objects is less than 5 degrees. The crescent moon will be near Saturn on the mornings of November 22 and December 19 & 20.

Mercury near the Evening Star

Mercury passes behind the sun (superior conjunction) on September 28, and then gradually reappears in the evening sky. But this is not a favourable apparition for the tiny planet, which will remain very low on the horizon throughout this cycle. Despite everything, a slim window of observation will open from the end of October to mid-November: Mercury will be just two degrees below Venus, which serves as a marker. Since Mercury is much fainter than Venus, and much closer to the horizon, a pair of binoculars will help you locate the elusive planet.

Mercury then plunges toward the sun once more and is at inferior conjunction (between the earth and sun) on December 4. After mid-December, the planet emerges above the southeast horizon at dawn, and it becomes visible about 45 minutes before sunrise until the beginning of 2012.

Clear skies!

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Adaptation: **Louie Bernstein**

Seasonal Milestones

The **autumn equinox** takes place on Sept. 23, 2011, at 5:05 EDT; the **winter solstice** occurs on Dec. 22 at 0:30 EST. Autumn will last 89 d 20 h 25 min.

We change to **Eastern Standard Time** during the night of November 5 to 6: Clocks are set back one hour.

Phases of the Moon

*(Eastern Daylight Time, except * = Eastern Standard Time)*

First quarter	Full moon
Sept. 4 at 13:39	Sept. 12 at 5:27
Oct. 3 at 23:15	Oct. 11 at 22:06
Nov. 2 at 12:38	Nov. 10 at 15:16*
Dec. 2 at 4:52*	Dec. 10 at 9:36*
Last quarter	**New moon**
Sept. 20 at 9:39	Sept. 27 at 7:09
Oct. 19 at 23:30	Oct. 26 at 15:56
Nov. 18 at 10:09*	Nov. 25 at 1:10*
Dec. 17 at 19:48*	Dec. 24 at 13:06*

The Pocket Planetarium *is a seasonal information newsletter published by the Planétarium de Montréal, 1000, rue Saint-Jacques, Montréal (Québec) H3C 1G7*
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