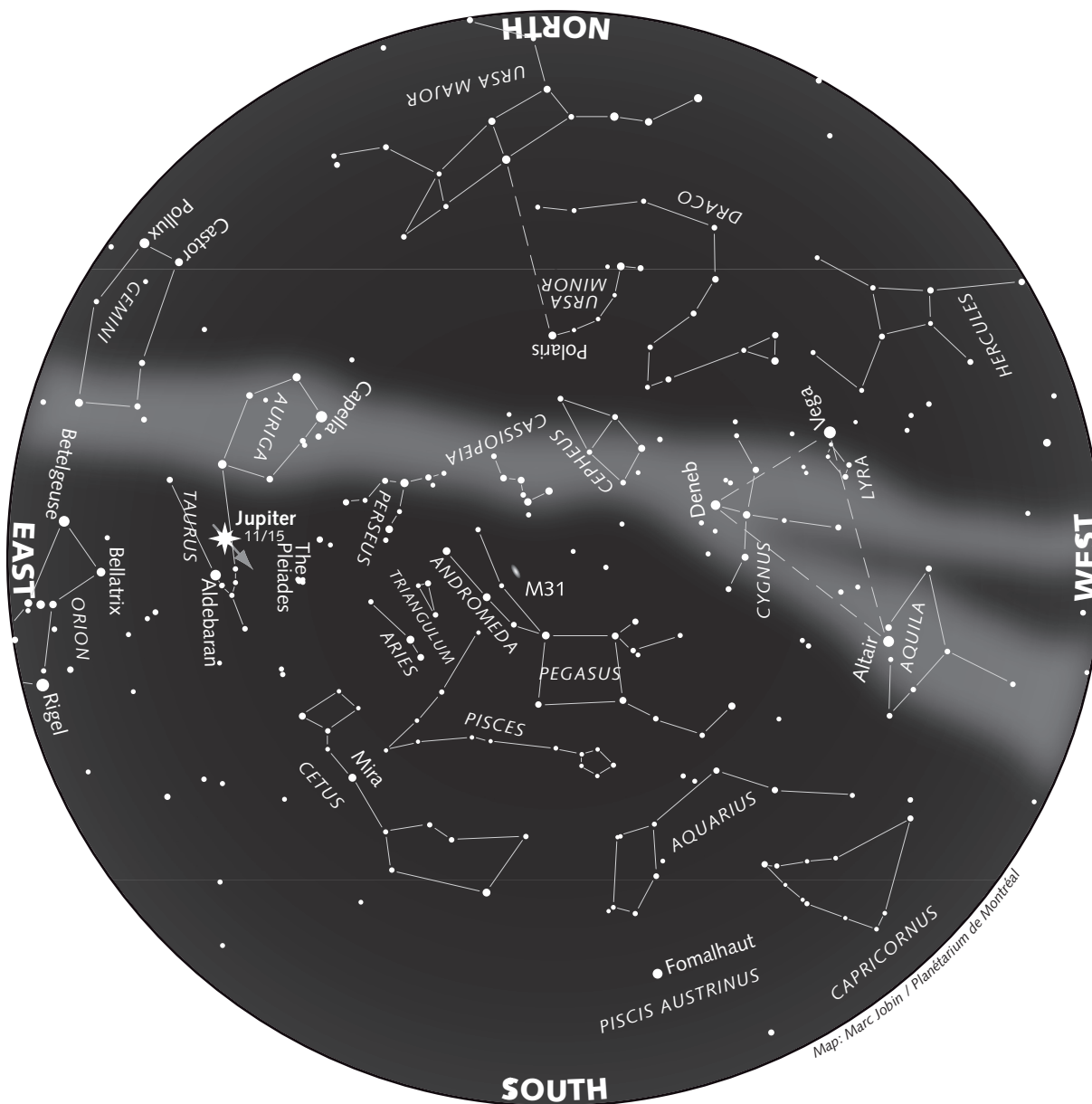


The Starry Sky — Autumn 2012



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

The Sky This Autumn

The Red Planet, now home to the Curiosity rover that landed in August, remains visible early in the evening.

To see Venus, Saturn and Mercury, you'll have to wait till dawn. Meanwhile, the night belongs to Jupiter...

Jupiter, star of the autumn sky

As fall gets underway, **Jupiter** rises around 10 P.M.: You'll find the brilliant planet above the east-northeast horizon, in Taurus, just left of the Hyades star cluster and the orange star, Aldebaran. Jupiter begins its retrograde loop on October 4, and gradually approaches the Hyades and Pleiades over the coming weeks. At the end of October, Jupiter rises around 8:00 P.M. and is high in the east later in the evening.

The giant planet arrives at opposition on December 2, at which point it will appear above the east-northeast horizon at twilight, culminate high in the south around midnight, and disappear beneath the west-northwest horizon at dawn. Opposition is the best period to observe a planet through a telescope: Jupiter's multiple cloud bands and Galilean moons are a delight for the eyes!

The gibbous moon will be near Jupiter on the nights of October 4 to 5 and 5 to 6; and it will pass less than 2 degrees from the giant planet on the night of November 1 to 2. Lastly, the full Moon will be just 1½ degrees from Jupiter **on the evening and night of November 28 to 29**: On the 28th, at twilight, don't miss the spectacular tandem rising of Jupiter and the full Moon above the east-northeast horizon.

Venus, the Morning Star

Over the coming months, dazzling **Venus** will be visible during the pre-dawn hours up until daybreak. The planet begins the season in Leo, but moves into Virgo, Libra, and finally enters Scorpius a few days before the winter solstice. At the end of September, the Morning Star rises 3½ hours before the Sun. However, Venus gradually closes in on the Sun as it loses altitude in the sky. By the end of November, the planet appears

2½ hours before sunrise, and by the end of December, it rises just 2 hours before the Sun. At this point, and for the following weeks, Venus will slip along the horizon and move from the east to the southeast.

Venus takes part in several interesting rendezvous this fall. On the morning of October 3, the planet passes less than ¼ of a degree from the bright star, Regulus, in Leo. **On November 27 at dawn**, Venus encounters Saturn; the two will be separated by ⅔ of a degree. In December, the Morning Star approaches Mercury: The pair will be less than 7 degrees apart from December 4 to 15, with their closest approach on the 9th. The lunar crescent will be near Venus on the mornings of October 12 and November 11. **On December 11**, the crescent Moon will be just 2 degrees to the right of Venus: Don't miss this spectacular sight in the dawn sky!

Mars marks time

Mars, currently far from Earth, appears faint and unremarkable. Curiously, because of its present position relative to the Earth and Sun, Mars seems to remain at the same place in the sky: In fact, this fall, it appears to be "marching on the spot" low on the southwest horizon at twilight. Of course, this is an illusion, and a closer look reveals the constellations passing by in the background: From September to December, Mars moves from Libra to Scorpius to Sagittarius. **From October 18 to 22**, the Red Planet will be near Antares, the brightest star in Scorpius: This is an excellent opportunity to compare the colour of the two objects. Make note, as well, of the crescent Moon's presence near Mars on the evenings of September 19, **October 18** (very low in the southwest above Mars and Antares), and again on the evenings of November 15 & 16 and December 14 & 15. The Red Planet sets early and will disappear in the glow of twilight later this winter.

Saturn reappears in the morning sky

Saturn vanishes in the twilight during the last evenings of September. The ringed planet prepares to pass behind the Sun and will be in conjunction with our daytime star on October 25. Around mid-November, it gradually reappears in the dawn sky, where it will encounter Venus **on November 27**: Less than ¾ of a degree will separate the two planets. The crescent Moon will be to

Presenting the Geminids

The Geminid meteor shower is expected to peak **around 7:00 in the evening on December 13**, just a few hours after the new Moon. Since moonlight will not be a factor, astronomical conditions for observing the Geminids, one of the most prolific annual meteor showers, will be excellent in 2012. Under a transparent sky, one should expect to see between 30 and 50 meteors per hour, after the constellation of Gemini (where the shower's radiant is located) rises into the sky. Let's hope for clear weather conditions, which is unfortunately not often the case at this time of year.

the right of Saturn, at dawn, on November 12; you'll find the pair above the east-southeast horizon, 45 minutes before sunrise. And finally, on December 10, one hour before daybreak, the Moon will be to Saturn's lower right in the southeast.

Mercury at dawn

Early risers take note: **Mercury** will provide a good apparition this December in the morning sky. During the last days of November, the tiny planet will become visible at dawn, 45 to 60 minutes before sunrise, above the east-southeast horizon. Mercury quickly gains brightness at the beginning of December, and becomes fairly easy to spot. **On December 11 at dawn**, the planet will form a beautiful trio with Venus and the Moon. Mercury gradually returns toward the horizon after December 5, but will remain visible, despite everything, until the winter solstice.

Clear skies!

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Phases of the Moon

(Eastern Daylight Time, except * = Standard Time)

| New moon | First quarter |
|-------------------|-------------------|
| Sept. 15 at 22:11 | Sept. 22 at 15:41 |
| Oct. 15 at 8:02 | Oct. 21 at 23:32 |
| Nov. 13 at 17:08* | Nov. 20 at 9:31* |
| Dec. 13 at 3:42* | Dec. 20 at 0:19* |
| Full moon | Last quarter |
| Sept. 29 at 23:19 | October 8 at 3:33 |
| Oct. 29 at 15:49 | Nov. 6 at 19:36* |
| Nov. 28 at 9:46* | Dec. 6 at 10:31* |
| Dec. 28 at 5:21* | Jan. 4 at 22:58* |

Seasonal Milestones

The **autumn equinox** occurs on September 22, 2012, at 10:49 A.M. EDT, and the **winter solstice** will take place on December 21 at 06:12 A.M. EST: Autumn will last exactly 89d 20h 23min.

We switch to **Eastern Standard Time** during the night of Sunday, November 4: Clocks are set back one hour.