The Pocket Planetarium ★

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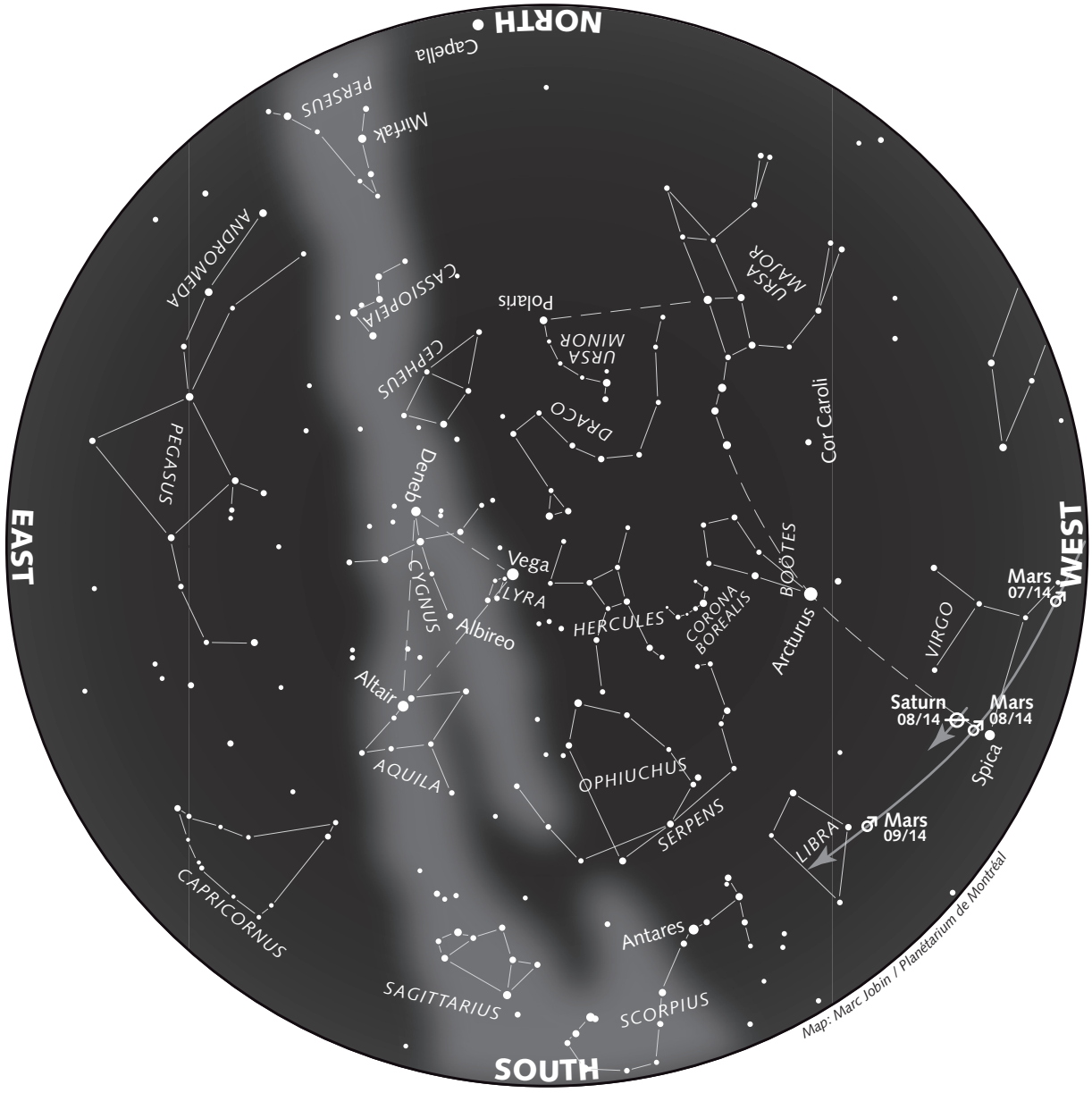
The Starry Sky — Summer 2012



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)

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.

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The Sky This Summer

The naked-eye planets appear in two distinct groups this summer: Saturn and Mars are visible early in the evening, while Venus and Jupiter appear at dawn.

A last look at Saturn

Saturn moves very slowly among the stars, taking thirty years to complete its circuit of the constellations. For several months now, the planet has formed a remarkable duo with Spica, the brightest star in Virgo; and throughout this summer, both Saturn and Spica continue to shine above the southwest horizon.

To observe the planet and its famous rings, you must seize the opportunity as soon as night falls, and as early as possible in the season, since Saturn is approaching the Sun. Bit by bit, as the months pass, the ringed planet will appear progressively lower in the twilight sky: It will be completely lost in the Sun's glare around the end of September.

This summer, Saturn and Spica will be visited by Mars, which rapidly approaches the duo from the right. **Notice how the gap closes from night to night, until their closest approach on August 13 & 14.**

The gibbous Moon appears near Saturn and Spica on June 27 & 28; the first quarter Moon will be near the two on July 25; and on August 21, the lunar crescent will approach Saturn, Mars and Spica in the twilight.

Mars flees the Sun

Mars gradually moves closer to the horizon from week to week, and can be seen at twilight, very low in the west-southwest. The Red Planet leaves Leo and crosses the border of Virgo on June 20. As the weeks pass, notice how quickly Mars moves eastward among the stars, as if in a futile attempt to flee the Sun, which lurks just below the northwest horizon: The Sun eventually catches up. As such, the Red Planet moves toward Saturn and Spica, which are off to the left, and **it passes between the two on August 13 & 14.** The lunar crescent will join the trio, **on August 21 at twilight,** low on the west-southwest horizon, about 45 minutes after sunset — a scene worth appreciating. But Mars doesn't stop there: It continues on its eastward course, and enters the constellation of Libra on September 4.

Apart from August 21, the lunar crescent will also be near Mars on the evenings of June 25, July 24, and September 19.

Jupiter and Venus — magnificent at dawn

Jupiter is visible at dawn, above the east-northeast horizon. During the first days of summer, the brilliant planet appears in the glow of daybreak, low in the sky about an hour before sunrise. But as the days pass, Jupiter moves away from the Sun, gains altitude, and rises earlier and earlier.

During the last days of June, you'll discover that the giant planet has company: **Venus,** the dazzling Morning Star, emerges above the horizon and appears below Jupiter. Between June 28 and July 5, the two planets are separated by less than 5 degrees. As the days pass, Venus and Jupiter appear against a progressively darker sky, which allows us to see them shining among the stars of the Hyades and Pleiades, two bright clusters in the constellation of Taurus.

Early on the morning of July 15, a thin lunar crescent joins Jupiter and Venus, and in the background, the Hyades and Pleiades complete the stunning tableau. This pre-dawn scene is a must-see, which is best observed two hours before the sun rises. Notice how the scene changes as the colours of dawn unfold: The sky gets lighter, and the stars disappear one by one. Through binoculars, the view will be magnificent!

As the days go by, the two planets move farther from the Sun, rising earlier in the pre-dawn sky as they gain altitude. At the same time, Venus and Jupiter are moving apart from each other. Jupiter remains near the Hyades and Aldebaran, the brightest star in Taurus. As for Venus, the dazzling planet moves eastward among the constellations: It starts out in Taurus, then moves through Gemini, and enters Cancer early in September.

The crescent Moon will be near Jupiter on the mornings of August 11 & 12. Then, on the morning of September 8, the last quarter Moon will appear just 1½ degree to Jupiter's right.

Venus will also receive its share of lunar visits: the crescent Moon will appear near the dazzling planet on the mornings of August 13 & 14, and again on the morning of September 12.

Mercury in the morning sky

The tiny planet **Mercury** is never very far from the Sun, which makes it somewhat difficult to spot. However, it offers its best apparition of the summer during the second half of August: The furtive planet will appear at dawn, low in the east-northeast. Scan the horizon with binoculars, about 30 to 40 minutes before sunrise, and you should find it. During the final days of August, Mercury will be lower in the sky, but it will also be much brighter.

Clear skies!

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Adaptation: **Louie Bernstein**

Phases of the Moon

(Eastern Daylight Time)

New moon	First quarter
June 19 at 11:02	June 26 at 23:30
July 19 at 0:24	July 26 at 4:56
August 17 at 11:54	August 24 at 9:54
Sept. 15 at 22:11	Sept. 22 at 15:41
Full moon	**Last quarter**
July 3 at 14:52	July 10 at 21:48
August 1 at 23:27	August 9 at 14:55
August 31 at 9:58	Sept. 8 at 9:15
Sept. 29 at 23:19	October 8 at 3:33

An average year for the Perseids

The annual Perseid meteor shower is a summer classic. But from year to year observing conditions vary, which affects the quality of the show. As for the weather, well... it's a toss of the dice.

Two astronomical factors conspire against the Perseids in 2012. First, for observers in eastern North America, the meteor shower will reach its peak during broad daylight. In fact, **maximum activity for the shower is expected to occur around 8:00 A.M. EDT, on the morning of August 12.** For us, the night of August 11 to 12 will be closest to the maximum. However, after 1:00 A.M. you'll have to contend with the Moon's presence, which will light the sky and mask the faintest meteors.

But the situation isn't a total loss, and unless you travel to *really* dark skies, free from light pollution, moonrise should have little impact. Toward the end of the night, on August 11 to 12, just a few hours before the maximum, you can still expect to see about thirty meteors an hour — provided the sky is clear. But if the weather doesn't cooperate, take heart: The nights preceding and following the peak are still worth considering, even though the number of meteors diminishes rapidly with time, on either side of the maximum period. So get your wish-list ready, and... Here's to clear skies!

Seasonal Milestones

The **summer solstice** will take place on June 20 at 7:09 P.M. EDT, and the **autumn equinox** will occur on September 22 at 10:49 A.M. Summer 2012 will last exactly 93d 15h 40m.

On July 4 at 10 P.M. EDT, the Earth reaches **aphelion,** the point on its orbit *farthest* from the Sun. The Earth – Sun distance will then be 152,092,425 km.

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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