The Pocket Planetarium ★

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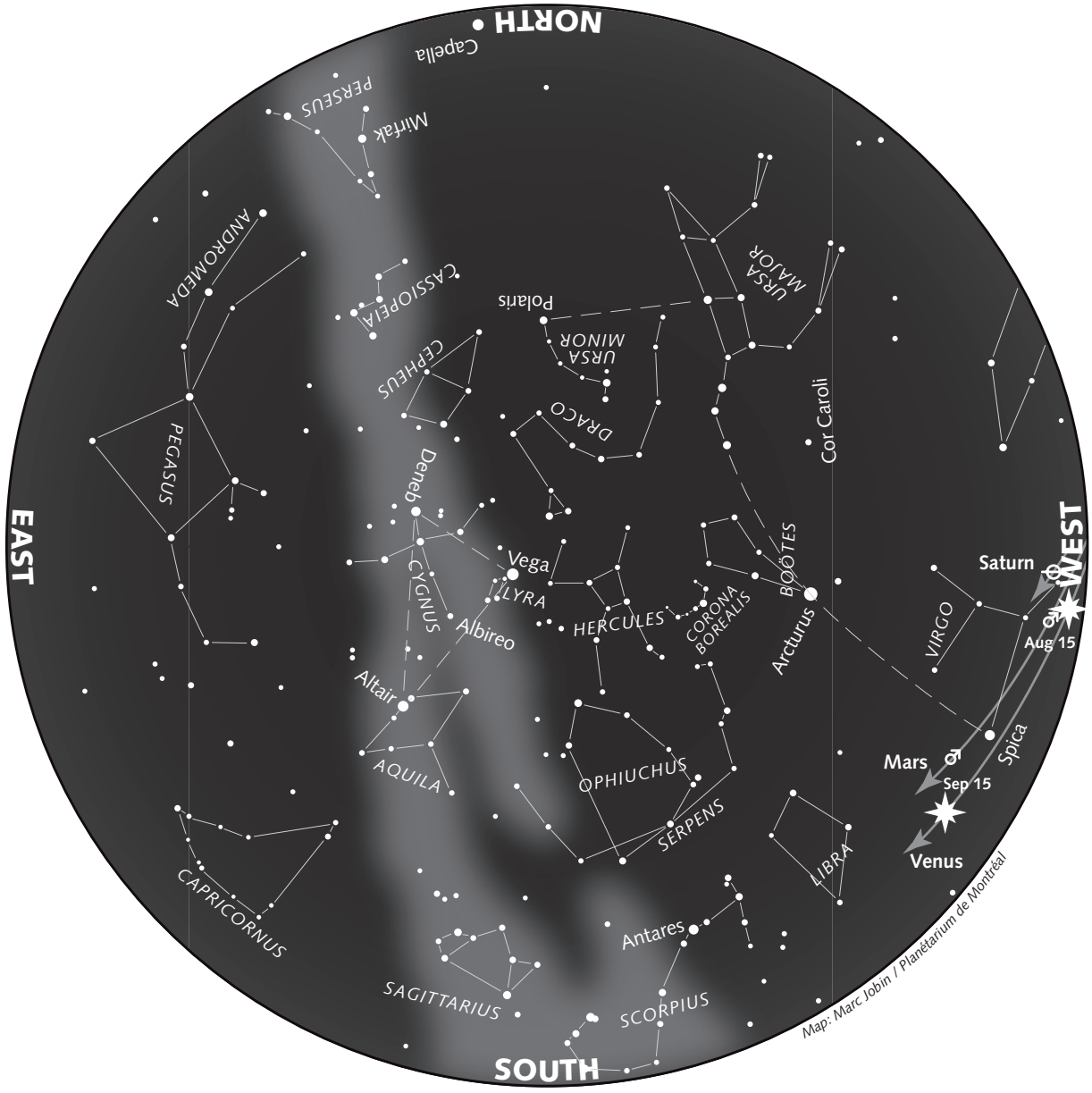
The Starry Sky — Summer 2010



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

There's a traffic jam on the western horizon at twilight, as three planets vie for the right of way. But they set early, and once darkness falls, Jupiter dominates the summer nights.

A Planetary Trio at Twilight

At the beginning of summer, three planets are visible on the western horizon after sunset. **Venus,** the dazzling Evening Star, certainly captures our attention, but a closer look reveals two much fainter planets, off to its left, in the glow of twilight. To the immediate left of Venus is **Mars,** recognisable by its orange tint; and a bit farther in the same direction, we find **Saturn,** the ringed planet.

Throughout July, the gap between this planetary trio diminishes from evening to evening. Mars is first to approach Saturn: **From July 29 to August 1,** the two planets are less than 2 degrees apart. As Mars continues on its eastward path, Venus is next to overtake Saturn, moving within 3 degrees of the ringed planet **on the 7th and 8th of August.** Notice how the triangle, formed by the three planets, changes over the course of just a few days — from long and skinny (toward the end of July), to more compact (at the beginning of August) and long once again (in mid-August). The lunar crescent passes beneath the three planets on July 14, 15 and 16, and again on August 12 and 13.

Finally, Venus catches up to Mars, passing less than 2 degrees below the red planet **from August 17 to 20.** As the two planets move away from Saturn, they approach the bright star Spica, forming another triangle during the end of August and the beginning of September. Throughout this period, Saturn moves steadily into twilight's glow, and disappears from view after the first week of September. The crescent Moon is to the left of Venus and Mars on the evening of September 11.

On August 20, Venus reaches its greatest eastern elongation, 46 degrees to the left of the Sun. But this is a poor apparition for the Evening Star, which has remained low on the western horizon for the last several weeks. Unfortunately, this situation detracts from telescopic observations — unfortunate because the planet's changes in phase and size are spectacular as this autumn approaches.

Jupiter Rules the Night

Once Venus, Mars and Saturn disappear beneath the western horizon, you'll have to wait for **Jupiter** to see another naked-eye planet. At the beginning of summer, the brilliant planet appears on the eastern horizon at about 1:30 A.M. But Jupiter rises earlier in the evening as the season progresses. By mid-July, the giant planet rises before midnight and culminates at dawn. Jupiter arrives at opposition on September 21, one day before the end of summer: It rises at twilight and culminates high in the south around midnight.

The last quarter Moon appears near Jupiter on the mornings of July 3 and 4; and a gibbous Moon is above Jupiter on the night of July 30 to 31, and again on the night of August 26 to 27. Finally, the full Moon and Jupiter form a splendid sight during the night of September 22 to 23.

Seasonal Milestones

The **summer solstice** occurs on June 21 at 7:28 EDT, and the **autumn equinox** takes place on September 22, at 23:09; Summer will last exactly 93 d 15 h 41 min.

On July 6 at 7:00 EDT, the Earth is at **aphelion,** the point in its orbit farthest from the Sun. The Earth – Sun distance will then be 152,096,520 km.

Phases of the Moon

(Eastern Daylight Time)

First quarter	Full moon
June 19 at 0:29	June 26 at 7:30
July 18 at 6:11	July 25 at 21:36
August 16 at 14:14	August 24 at 13:05
Sept. 15 at 1:50	Sept. 23 at 5:17
Last quarter	**New moon**
July 4 at 10:35	July 11 at 15:40
August 3 at 0:59	August 9 at 23:08
Sept. 1 at 13:22	Sept. 8 at 6:30
Sept. 30 at 23:52	Oct. 7 at 14:44

An Excellent Year for the Perseids

In 2010, the Perseid meteor shower reaches its maximum **on August 12, at 20:00 EDT** — as the Sun sets for those in eastern North America — **making the night of August 12 to 13 the most favourable observing period.** The crescent Moon will set beneath the western horizon before the end of twilight, and will not affect observation of the Perseids. The number of visible meteors will increase as the night progresses, and as the radiant (the point in the sky from which the meteors appear to radiate) moves higher and approaches the zenith. Toward midnight, under a moderately dark and transparent sky, one should spot about 30 meteors per hour. This number could climb to 70, under an ideally dark and pristine sky. One should make the effort to leave the light-pollution of the city behind, and find the darkest sky possible. The night of August 11 to 12, and to a lesser extent, the 13th to 14th, will provide the best viewing opportunities. But the further we are from the maximum, the fewer the number of meteors one can expect to see.

Mercury In the Morning Sky

Mercury makes a quick evening appearance, low on the western horizon, during August. But a few weeks later, its dawn apparition is more favourable. Over just a few days, **around September 15,** the tiny planet becomes bright enough to penetrate the glow of daybreak. Look for Mercury just above the eastern horizon 30 minutes before sunrise. This apparition continues until the opening days of October.

Happy observing!

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