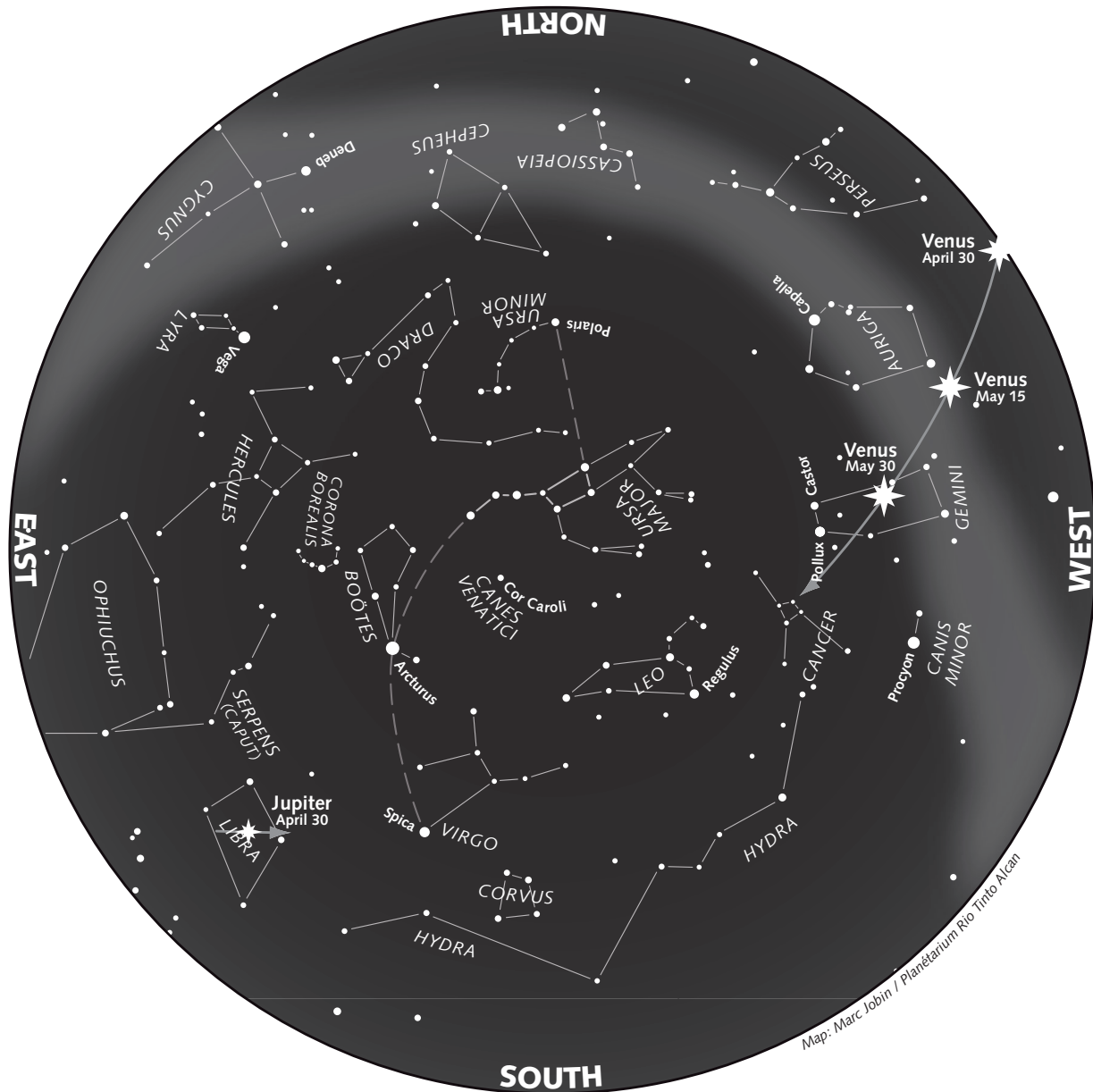


The Starry Sky — Spring 2018



Map: Marc Jobin / Planetarium Rio Tinto Alcan

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.

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This Star Map is Accurate on...

(Eastern Daylight Time)

- March 21 at 1 a.m.
- April 6 at midnight
- April 21 at 11 p.m.
- May 6 at 10 p.m.
- May 21 at 9 p.m.

The Sky This Spring

Venus turns up at twilight this spring. In late April Jupiter also emerges early in the night. The two planets then shine at the same time at opposite ends of the sky: one in the northwest and one in the southeast. Late at night and at dawn, Saturn and Mars arrive to put on a show of their own.

Venus, the Evening Star

Venus is back with a vengeance in the evening sky. In early spring, a half hour after sunset, the dazzling Evening Star grabs our attention a dozen degrees above the western horizon. But Venus moves farther and farther from the Sun, and its best period of visibility occurs in May and June. During this period, in the minutes following sunset, the planet blazes about 20 degrees high in the west-northwest. It sets more than two and a half hours after the Sun. Although Venus continues to drift away from the Sun thereafter (reaching a maximum distance around mid-August), its position among the constellations means that it appears lower and lower on the horizon over the course of the summer.

If you can get your hands on a small telescope, watch how Venus's appearance evolves this spring as the angle of illumination between the Sun, the planet and Earth changes. Venus has phases somewhat like the Moon. Over the spring, its disc transforms slowly from a "full Venus" to a three-quarter "gibbous Venus." Meanwhile, its apparent diameter grows by 10 to 15 arc seconds. This summer, the transformation is even more spectacular.

On April 17, the thin crescent Moon lies 5½ degrees to the lower left of Venus. **From April 25 to 28**, Venus wanders between the Hyades and Pleiades star clusters. Admire the scene through binoculars one hour after sunset. The crescent Moon returns 6 degrees to the left of Venus on May 17 at twilight and then again on the evening of June 16.

Jupiter in opposition

Brilliant **Jupiter** is found this year in the constellation Libra, where it moves slowly in retrograde

motion (westward or to the right) in relation to the background stars.

In early spring, Jupiter rises just before midnight and culminates in the south around 4 a.m. But as the weeks go by, the giant planet rises earlier and earlier. When it reaches opposition, on the evening of May 8, it's visible all night long (it emerges above the east-southeastern horizon at twilight, culminates southward in the middle of the night and disappears at dawn toward the west-southwest). As spring progresses, Jupiter arrives earlier and earlier in the evening at its ideal position for observation. And when spring finally gives way to summer, the planet already culminates in the south at twilight and sets in the southwest five hours later.

To observe Jupiter through a telescope in optimal conditions, wait till it's at its highest point southward. That way, you get the best view of its light and dark cloud bands. The same goes for the dance of its four Galilean moons, whose position changes from evening to evening. Carefully observe their configuration and you can even detect changes after only a few hours.

The waning gibbous Moon is very close to Jupiter on the nights of April 2–3 and April 3–4. The full Moon lies again near the giant planet on the nights of April 29–30 and April 30–May 1. On May 27, at twilight, Jupiter shines right next to the waxing gibbous Moon.

Mars more and more conspicuous

Amateur astronomers are eagerly awaiting the opposition of **Mars** this July. But during the first part of spring, the red planet remains too far from Earth and too small to reveal any interesting details through a telescope. Follow its rapid movement among the constellations with the naked eye at first. Be patient, though, because Mars doesn't rise before midnight till mid-June and reaches its highest point in the sky only at dawn.

At the start of the season, Mars is found in Sagittarius above the Teapot asterism and right near Saturn. Look for them rather low on the south-southeastern horizon around 5 a.m. **On the morning of April 2**, the red planet passes about one degree below the ringed planet. Mars then continues its path eastward and enters Capricornus on May 15.

Earth, on its smaller and faster orbit, gradually catches up to Mars. The distance between the two planets shrinks over the weeks, and the red planet becomes increasingly bright to the naked eye. Its magnitude goes from +0.4 at the start of spring to -0.1 a month later. In the third week of May, its magnitude reaches -0.9, making it very easy to spot in the sky.

Through a telescope, Mars gradually grows during this time, its apparent size exceeding 15 arc seconds by late May. From that point on,

it's worth getting out your instruments for your observations. At the summer solstice, the disc of Mars is 19 arc seconds across and shines at magnitude -1.9. At opposition, on the night of July 26–27, Mars glows at magnitude -2.8, and its disc is over 24 arc seconds across.

On April 7, late at night and at dawn, the waning gibbous Moon joins Saturn and Mars and creates a straight line with the two planets. **On the morning of May 6**, the waning gibbous Moon lies less than 2 degrees above Mars. **On the morning of June 3**, the waning gibbous Moon lies only 2½ degrees above Mars.

Saturn approaches opposition

Like Mars, **Saturn** now shines in the southernmost part of its trajectory, in the constellation Sagittarius. This is a disadvantage for observers in the northern hemisphere since the planet doesn't rise much above the horizon, thereby making telescope viewing difficult. It's a shame because its magnificent rings still appear wide open this year and are tilted about 26 degrees toward Earth.

During the first nights of spring, Saturn emerges in the southeast only after 3 a.m. Two hours later, at the first light of dawn, Sagittarius, Saturn and Mars reign above the south-southeastern horizon. Keep an eye on the red planet, which draws closer and closer to Saturn from the right. **On the morning of April 2**, Mars passes about one degree under the ringed planet and then moves eastward over the next few days. **On April 7, at the end of the night and at dawn**, the waning gibbous Moon joins Saturn and Mars and creates a short straight line with the two planets.

As the weeks go by, Saturn rises earlier and earlier. By mid-May, you can finally spot the ringed planet before midnight, and it culminates in the south at dawn.

Saturn is in opposition on June 27 a few days after the solstice. The planet emerges at twilight in the southeast, culminates just after 1 a.m. at only 22 degrees above the southern horizon and then disappears at dawn low in the southwest.

In the second half of the night on May 4 and 5, the waning gibbous Moon lies near Saturn. Late in the evening on May 31, the waning gibbous Moon rises alongside Saturn, less than 2 degrees to the left of the ringed planet.

Clear skies!

Research and text: **Marc Jobin**

Seasonal Milestones

The **spring equinox** takes place on March 20, 2018 at 12:15 p.m. EDT, and the **summer solstice** occurs on June 21 at 6:07 a.m. Spring will last exactly 92 days 17 hours 52 minutes.

Phases of the Moon

(Eastern Daylight Time)

| New moon | First quarter |
|-------------------|-------------------|
| March 17 at 9:12 | March 24 at 11:35 |
| April 15 at 21:57 | April 22 at 17:46 |
| May 15 at 7:48 | May 21 at 23:49 |
| June 13 at 15:43 | June 20 at 6:51 |
| Full moon | Last quarter |
| March 31 at 8:37 | April 8 at 3:17 |
| April 29 at 20:58 | May 7 at 22:09 |
| May 29 at 10:20 | June 6 at 14:32 |
| June 28 at 0:53 | July 6 at 3:51 |

Further details and more phenomena at espacepourlavie.ca/en/monthly-sky