The Pocket Planetarium ★

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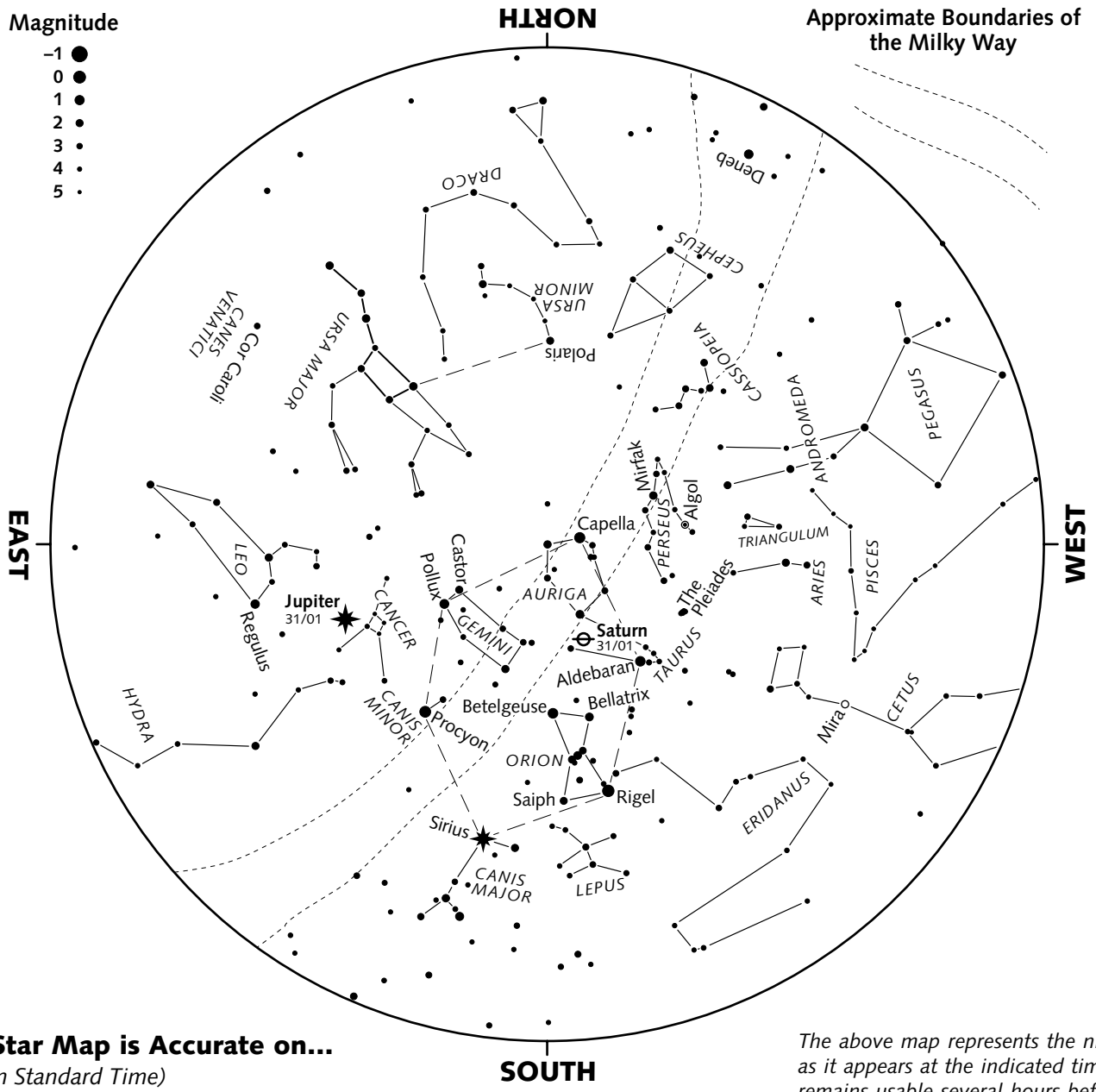
The Starry Sky — Winter 2002-03



Marc Jobin / Planétarium de Montréal

This Star Map is Accurate on...
(Eastern Standard Time)
December 21 at midnight
January 6 at 11 p.m.
January 21 at 10 p.m.
February 6 at 9 p.m.
February 21 at 8 p.m.
March 6 at 7 p.m.

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. By comparing the map with the sky you can acquaint yourself with the constellations, an ancient legacy of Greek mythology.

PLANÉTARIUM DE MONTRÉAL
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The Sky This Winter

The two largest and most spectacular planets in our solar system, Jupiter and Saturn, are visible throughout the evening and dominate our long winter nights. Then, as dawn approaches, Mars and radiant Venus appear in the southeast to greet early risers.

Saturn at its Best

Saturn was just in opposition on December 17 and is, therefore, visible as night falls. Moreover, the ringed planet is at its peak along the ecliptic: It reaches its highest point in the sky during the middle of the night in December, and then earlier and earlier as the weeks pass. As a result, Saturn is ideally positioned for observing throughout the winter — especially since its rings are tilted at their maximum angle to us. Now is the best time to marvel at this celestial wonder through the eyepiece of a telescope! Even a small instrument will reveal the magnificent rings that encircle the planet.

Saturn is in retrograde motion until February 22, which means it appears to move westward relative to the stars. Throughout the winter, it remains in the vicinity of Zeta Tauri, a star marking the tip of one of Taurus's horns. In fact, **on Christmas night,** the gap between Saturn and Zeta Tauri is less than one degree, which provides an excellent reference for tracking the planet's movement against the stars. You can easily identify Saturn when it appears next to the Moon on January 14 and 15; then again on February 11 (when the gap between the two is just 2 degrees); and finally, once more, on March 10 and 11.

Now Starring... Jupiter

Jupiter arrives in opposition on February 2, a month-and-a-half after Saturn. In January, the giant planet rises around 18:00, and then earlier and earlier over the following months. It reaches its highest point in the sky at the end of February during the middle of the night, which makes mid-winter the best time to observe Jupiter's cloud bands, and its four largest moons (visible even through binoculars). It's a spectacular show for telescopes of all sizes!

Jupiter is a brilliant planet that is easy to spot, especially since it is now located against the faint background stars of the constellation Cancer. In case of doubt, however, the Moon is near Jupiter on January 18 and 19; then again on February 15; and finally, once more, on March 14 (when the gap between the two is 3.5 degrees).

Like Saturn, Jupiter is presently in retrograde motion and is nearing the Beehive cluster (Messier 44), an open star cluster situated at the heart of Cancer. As winter draws to a close, and for several weeks after, the two objects will share the same field of view, as seen through a telescope at low power.

Venus, the Morning Star

At the beginning of winter the Sun rises late: That gives everyone an opportunity to see Venus, dazzling in the southeast at dawn. But as winter progresses, you'll need to get up earlier and earlier to see the morning star.

Venus is not alone in the sky: **On the morning of December 21,** Mars is just two degrees to the right, but it is considerably fainter! **On December 30,** a thin crescent Moon joins the two planets, forming a resplendant triangle against the glow of dawn. The Moon will also appear near Mars on January 27, and again on February 24 and 25.

On the morning of January 17, Venus is low in the southeast, just 8 degrees north of Antares, the brightest star in Scorpius. Two weeks later, around February 1, it is Mars' turn: The red planet appears just 5 degrees above Antares. Antares actually means "rival of Mars" in Greek, and if you compare the color of the two celestial objects you'll understand how Antares got its name.

Happy observing!

Research, text, and illustrations:
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Translation: **Louie Bernstein**

Phases of the Moon

(Eastern Standard Time)

New moon	First quarter	Full moon	Last quarter
Dec. 4 at 2:34	Dec. 11 at 10:49	Dec. 19 at 14:10	Dec. 26 at 19:31
Jan. 2 at 15h23	Jan. 10 at 8h15	Jan. 18 at 5h48	Jan. 25 at 3h33
Feb. 1 at 5h48	Feb. 9 at 6h11	Feb. 16 at 18h51	Feb. 23 at 11h46
March 2 at 21h35	March 11 at 2h15	March 18 at 5h34	March 24 at 20h51

Seasonal Milestones

The **winter solstice** occurs on December 21, 2002 at 20:14 EST. The **spring equinox** will take place on March 20 at 20:00 EDT. Winter 2002/2003 will last 88d 23h 46min.

On January 4th at 0h, the Earth will reach **perihelion** – its closest orbital point to the Sun: The distance between the Earth and Sun will then be 147 103 000 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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