

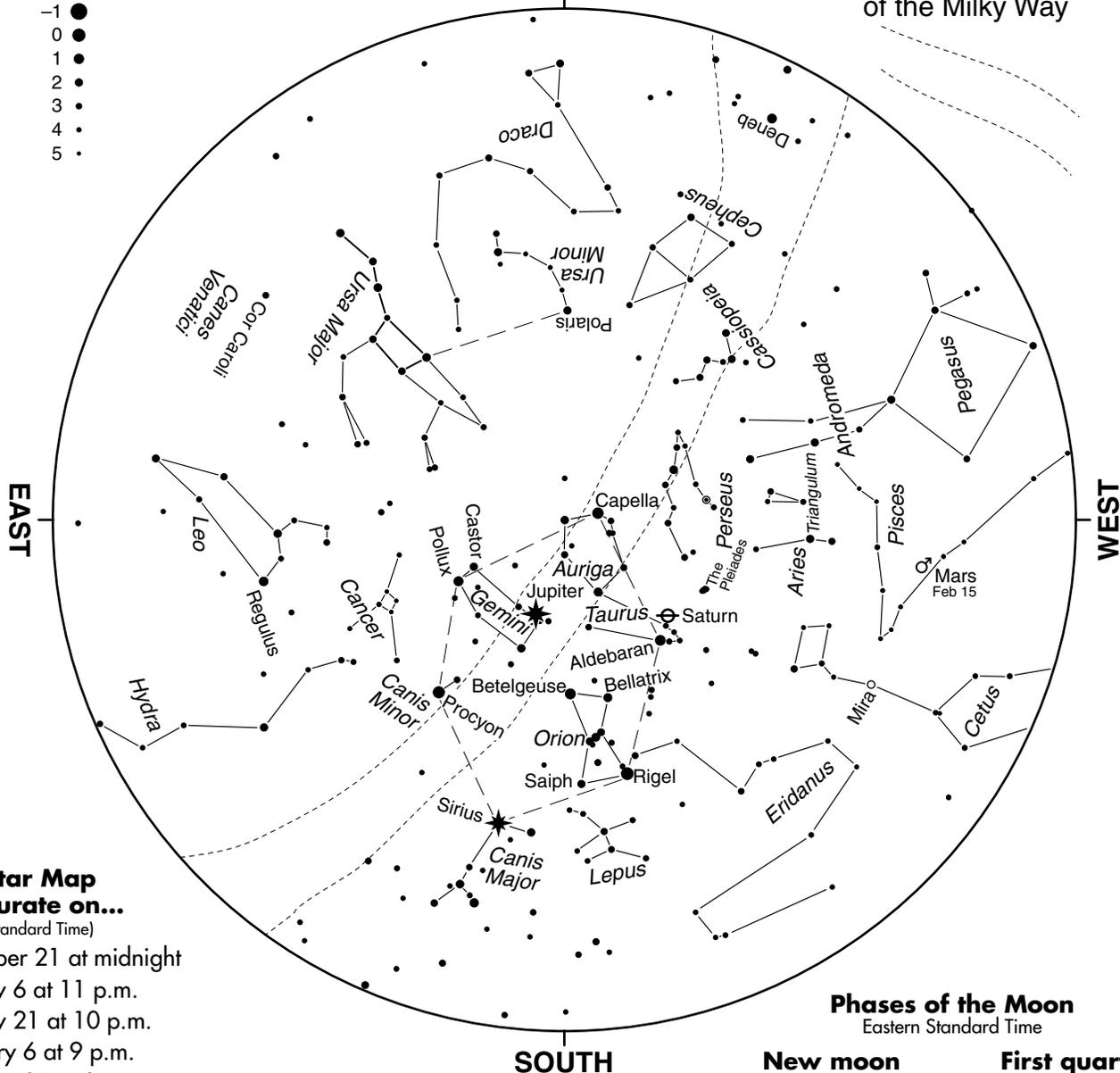
The Starry Sky — Winter 2001-02

Magnitude



NORTH

Approximate Boundaries
of the Milky Way



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.

SOUTH

Phases of the Moon

Eastern Standard Time

New moon

December 14 at 15:47

January 13 at 8:29

February 12 at 2:41

March 13 at 21:02

Full moon

December 30 at 5:40

January 28 at 17:50

February 27 at 4:17

March 28 at 13:25

First quarter

December 22 at 15:56

January 21 at 12:46

February 20 at 7:02

March 21 at 21:28

Last quarter

January 5 at 22:54

February 4 at 8:33

March 5 at 20:24

April 4 at 10:29



Ville de Montréal

The Sky this Winter...

This season all the planetary action takes place during the first half of the night. As a result, Jupiter and Saturn are at their best in the evening: Together they dominate the constellations of the winter hexagon. Mars also enjoys an extended presence in the evening sky. However, Venus has left our winter skies for a "planetary vacation" behind the Sun. The dazzling planet will return in all its splendor this March.

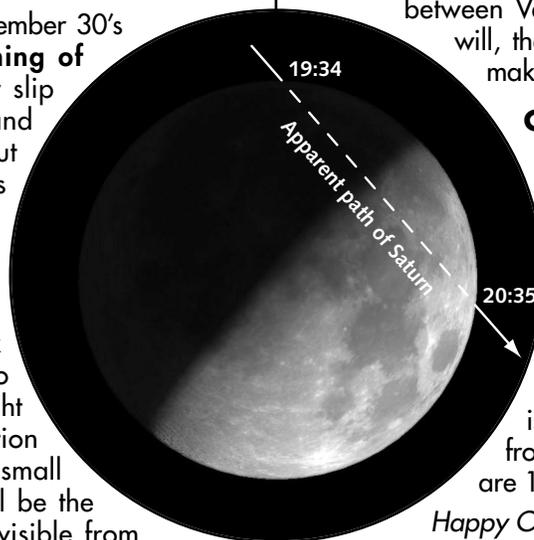
The giants dominate

Both giant planets, Jupiter and Saturn, are high in the evening sky and well placed for observing — much to the delight of amateur astronomers! **Jupiter** is currently in Gemini, and in opposition on January 1, which means it rises at sunset and remains visible all night. With a good pair of binoculars you can distinguish its four largest moons (Io, Europa, Ganymede, and Callisto) and follow their changing positions from night to night: It's a real celestial ballet! Through a telescope, when sky conditions are right, fascinating cloud bands can be seen in Jupiter's atmosphere. The Moon appears near Jupiter on the night of December 29 to 30, 2001, and again on the night of January 26, 2002. Don't miss the **evening of February 22**: The Moon will pass less than a quarter of a degree above the giant planet. With Jupiter as a brilliant reference point, you can see how quickly the Moon moves against the celestial background.

Meanwhile, **Saturn** is in Taurus near the Hyades, a superb naked-eye star cluster. The planet's rings are at the maximum angle for observing: Through a telescope, a visual delight awaits the observer! The Moon is in Saturn's

Saturn and the Moon play hide n' seek (again!)

We're in for a repeat of last November 30's occultation: **Early on the evening of February 20**, Saturn will slowly slip behind the first quarter Moon and reappear on the other side about an hour later. In Montreal, this spectacular event begins around 19:34 and ends at about 20:35. The planet and its magnificent rings will take more than a minute to disappear behind the dark edge of the Moon, and nearly two minutes to re-emerge on the bright side. Try to observe the occultation with binoculars or better yet, a small telescope. Don't miss it! This will be the last good planetary occultation visible from our region until the end of 2004.



neighborhood on December 27, 2001; on January 23 & 24, 2002; and **February 20** (when the Moon will actually pass in front of the ringed planet: see box). Finally, on **March 19**, the crescent Moon will appear between the Hyades and Pleiades, with Saturn just below: It's a great photo opportunity!

Mars flees the Sun

The Red Planet continues to move eastward (toward the left) against the background stars with such rapidity that the Sun can't catch up. As a result, for the past few months Mars has occupied the same area above the southwestern horizon at nightfall. But this standstill is only apparent. Over the winter months Mars enters several constellations: Aquarius, then Pisces (starting January 9), and finally Aries on February 27.

Since last spring the distance between Earth and Mars has been increasing: As a result, the Red Planet is getting fainter. This winter Mars is nearly indistinguishable from the stars, except for the tell-tale orange color, which helps to identify it. Due to its distance, Mars appears small and its miniscule disk offers little of interest to a small telescope.

The crescent Moon is near Mars on December 20, January 18, February 16 and March 17.

Return of the evening star

Venus moves behind the Sun on January 14 and will remain unobservable for most of the winter. It will reappear as the evening star at the end of February / beginning of March. Scan the western horizon during twilight, about twenty minutes after sunset: A pair of binoculars will help you locate the planet. The horizon should be free of cloud and other obstructions. In the weeks that follow, the gap between Venus and the Sun increases: The planet will, therefore, appear higher in the twilight sky making it an easier target.

Odds and Ends...

The **winter solstice** occurs on December 21, 2001 at 14:21 EST; the **spring equinox** takes place on March 20, 2002 at 14:16 P.M. EST. Winter, the shortest season in the northern hemisphere, will last 88 days 23 hours 55 minutes.

On January 2 at 09:00 EST, the Earth is at **perihelion**, its closest orbital distance from the Sun: At this point the Earth and Sun are 147,098,000 km apart.

Happy Observing!

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