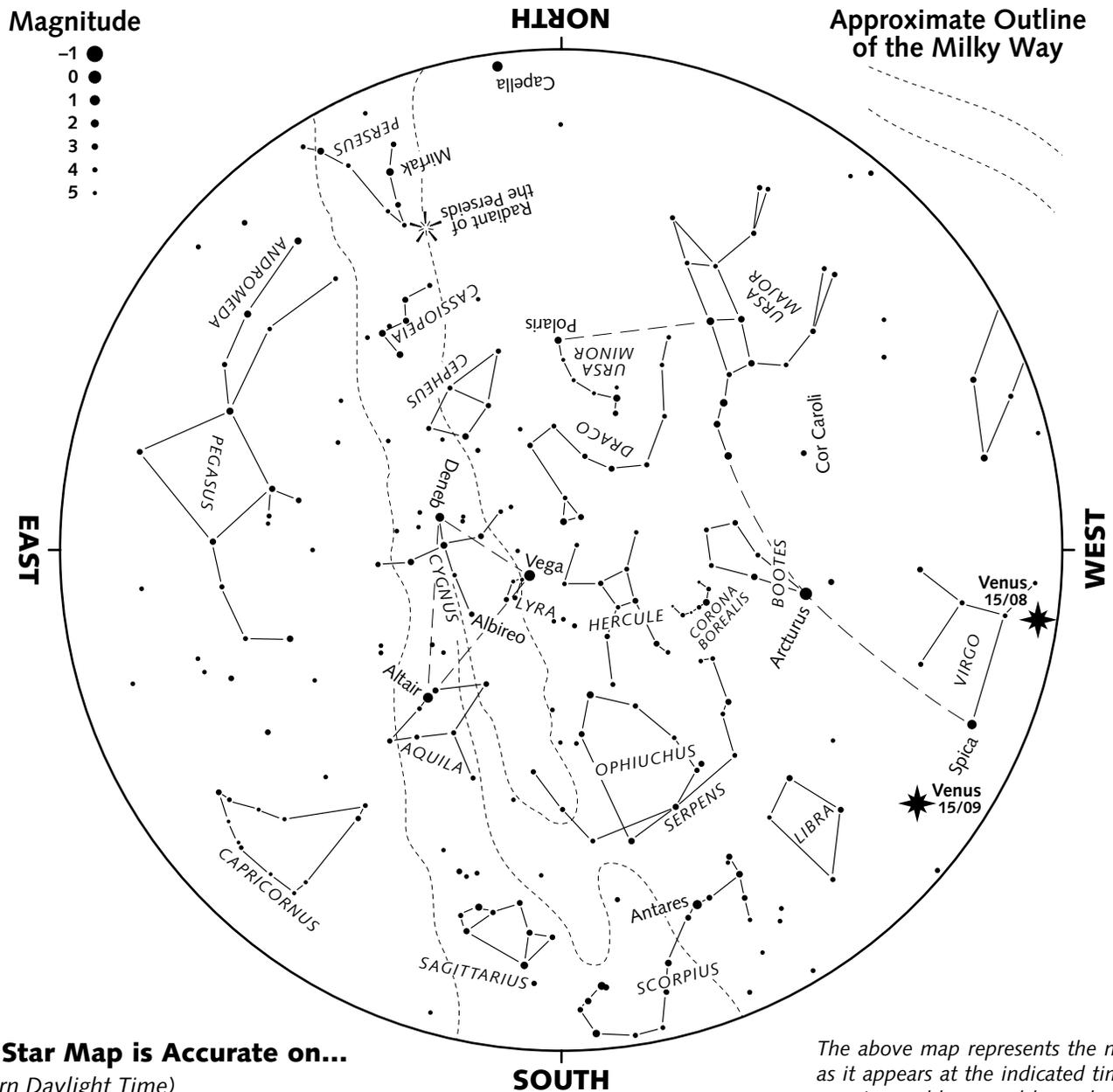


## The Starry Sky — Summer 2002



### 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 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.

# The Sky this Summer...

One by one, the "stars" of spring's grand planetary assemblage have retreated into the western twilight and have disappeared from view. The only actor remaining is Venus, which now lights our summer evenings. But eventually, Saturn, Jupiter and Mars will return to grace the skies of dawn.

## Lone Venus in the Evening

Over the coming months, the orbital circumstances of the planets provide a poor view of Venus. Though Venus and the Sun are nearly at their maximum angular separation, the planet's orbital plane now lies along the western horizon. As a result, Venus never appears very high in the sky, and as summer progresses the situation worsens. At the end of June, about 45 minutes after sunset, Venus is 15 degrees above the horizon and it sets two-and-a-half hours after the Sun. But early in September, things deteriorate: Venus will only be 4 degrees above the horizon and will set just an-hour-and-a-quarter after the Sun. Though Venus' great brilliance continues to render it visible, it will eventually succumb to the glow of twilight.

Throughout this period, Venus demonstrates its phases, which resemble those of the Moon. Unfortunately, however, the planet's low position makes it a poor target for telescopes. This summer, Venus evolves from a quarter phase to a thin crescent, while its apparent diameter more than doubles!

A crescent Moon will accompany Venus on several occasions this summer: On July 12<sup>th</sup> and 13<sup>th</sup>, the Moon will appear 8 degrees to the right, and then 6 degrees to the upper left of Venus, respectively. On August 11<sup>th</sup>, the lunar crescent will be 5 degrees to the upper left of the planet; and finally, on September 9<sup>th</sup>, the crescent Moon will be situated 8 degrees to its upper right. Venus will appear one degree above the bright star Regulus, on July 10<sup>th</sup>, and less than one degree below the star Spica, on August 31<sup>st</sup>.

## The Perseid Show

Though the planets are lacking this summer, the Perseids are set to put on a dazzling show. This renowned meteor shower will reach its peak at around 18:00 (EDT) on August 12<sup>th</sup>. Although that's late afternoon, the shower is spread out, and the best time for observing these meteors is on the night of August 11<sup>th</sup> to 12<sup>th</sup>, and again on the night of August 12<sup>th</sup> to 13<sup>th</sup>.

Conditions for observing the Perseids are better after the Moon sets, which is about 22:00 on August

11<sup>th</sup> and 22:30 on the 12<sup>th</sup>. After moonset, the sky will be a lot darker and the point from which the meteors appear to emanate (the *radiant*) will be fairly high. At that time, the Perseids should appear in all their splendor. Around the peak, you can expect to see about thirty meteors an hour — less during the first half of the night and on the evenings surrounding August 11<sup>th</sup> and 12<sup>th</sup>.

To observe the Perseids, you'll need a clear, dark sky; a low view of the horizon; and eyes that are wide-open! Forget the binoculars and telescope: Their field of view is too narrow. Just lie back (a lawn chair will prove most comfortable) and scan the entire sky about half way up from the horizon. Don't bother looking toward the radiant: The meteors rarely materialize there. In order to preserve your night vision, avoid the glare of bright lights. Use a low-intensity flashlight covered with red cellophane to illuminate your star map or planisphere. It's fun to count meteors during intervals of 15, 30 or 60 minutes; and it's also a great occasion to learn the summer constellations.

In closing, Quebec nights are often quite humid: To avoid turning a pleasant night of observing into an evening of misery, remember to dress warmly, don't lie directly on the dew soaked ground... and definitely prepare your list of wishes!

*Happy observing!*

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### Phases of the Moon (Eastern Daylight Time)

New moon	First quarter	Full moon	Last quarter
June 10 at 19:46	June 17 at 20:29	June 24 at 17:42	July 2 at 13:19
July 10 at 6:26	July 17 at 0:47	July 24 at 5:07	August 1 at 6:22
August 8 at 15:15	August 15 at 6:12	August 22 at 18:29	August 30 at 22:31
Sept. 6 at 23:10	Sept. 13 at 14:08	Sept. 21 at 9:59	Sept. 29 at 13:03

### Noteworthy Events

The **summer solstice** occurs on June 21, 2002 at 9:24 EDT; and the **autumn equinox** will take place on September 23 at 00:55. Summer is the longest season in the northern hemisphere: It lasts 93 d 15 h 31 min.

On July 6<sup>th</sup> at 0 h, the Earth will reach aphelion – its farthest orbital point from the Sun: The distance between the Earth and Sun will then be 152 094 000 kilometres.