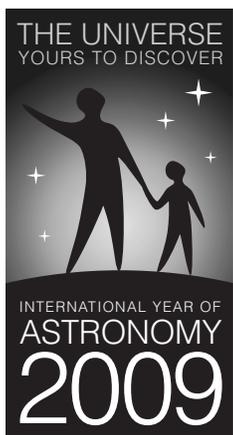
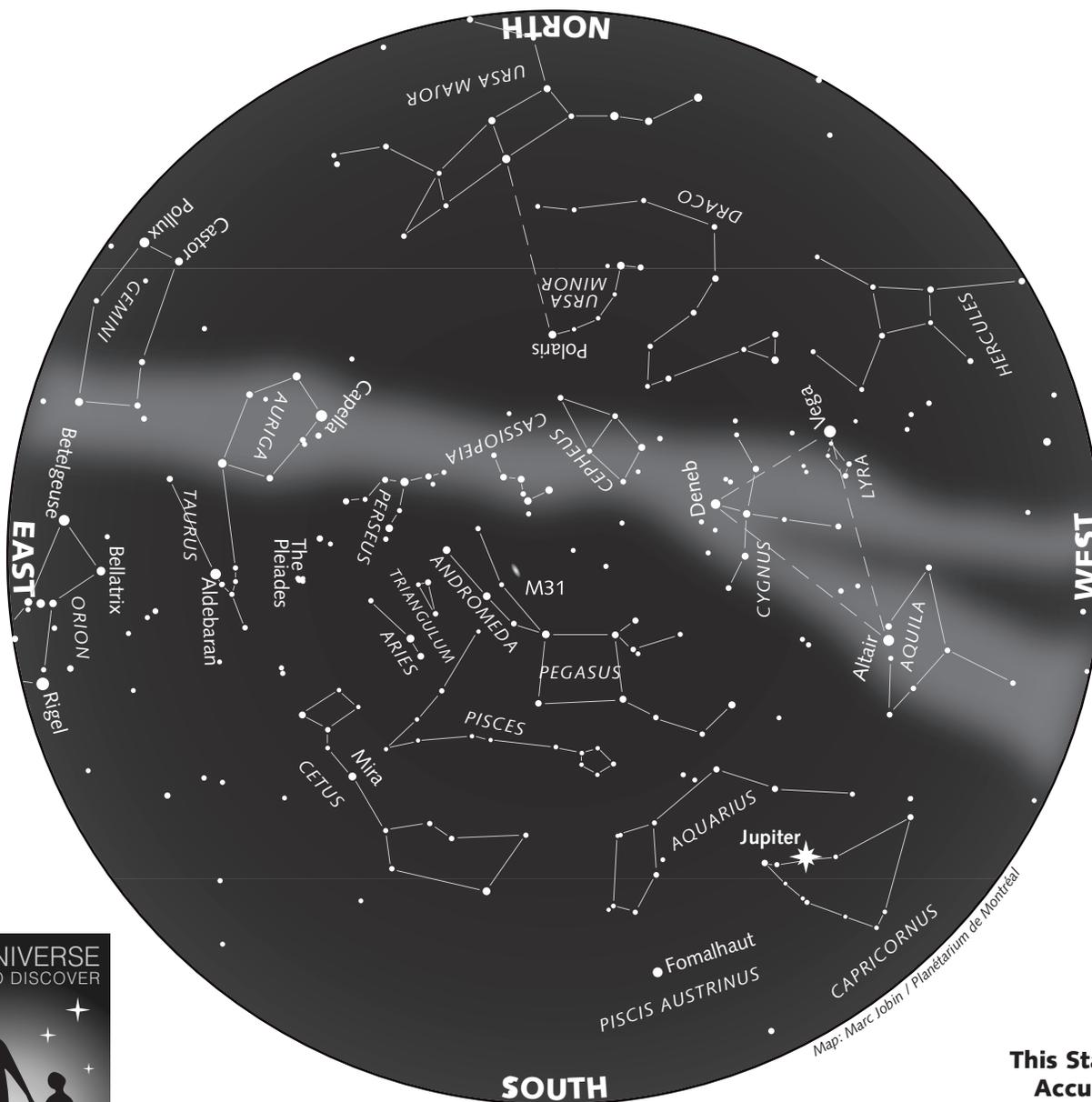


The Starry Sky — Autumn 2009



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: www.planetarium.montreal.qc.ca

This Star Map is Accurate on...

(Eastern Daylight Time, except where mentioned otherwise)

- September 21 at 1 a.m.
- October 6 at midnight
- October 21 at 11 p.m.
- November 6 at 9 p.m. EST
- November 21 at 8 p.m. EST
- December 6 at 7 p.m. EST

The Sky This Autumn

As autumn begins, Jupiter is the only planet to grace the evening sky, but by early October, Mars rises before midnight, and accompanies the giant planet. Meanwhile, Mercury, Venus and Saturn partake in two very close conjunctions at dawn. Oh, and let's not forget the Geminid meteor shower...

Mercury at its best

Mercury spent the summer lingering in the Sun's glare, but as autumn begins, the tiny planet quickly captures the dawn spotlight. During the last week of September, Mercury climbs quickly into the eastern sky, where it can be found nestled between dazzling Venus above, and Saturn below. During this period, the elusive planet gains brightness, making it easy to spot.

On October 6, Mercury reaches its greatest western elongation, at which point it rises an hour-and-a-half before the Sun! Around this time, the gap between Mercury and Saturn begins to close, as the swift planet re-descends toward the horizon. **On October 8**, Mercury appears just 0.3 degrees to the lower right of the much fainter Saturn — a very close conjunction, not to be missed!

The tiny planet continues its descent toward the horizon, and disappears in the Sun's glare by the end of October. Then, around mid-December, Mercury re-appears in the evening, and rapidly

Seasonal Milestones

The **autumn equinox** takes place on September 22, at 17:19 EDT; the **winter solstice** will occur on December 21 at 12:47 EST. Autumn 2009 will last exactly 89d 19h 28m.

On Sunday morning, November 1, at 02:00, we **return to Eastern Standard Time**: Clocks are set back one hour.

Phases of the Moon

(Eastern Standard Time,
except * = Eastern Daylight Time)

Last quarter	New moon
Sept. 11 at 22:16*	Sept. 18 at 14:44*
Oct. 11 at 4:56*	Oct. 18 at 1:33*
Nov. 9 at 10:56	Nov. 16 at 15:14
Dec. 8 at 19:13	Dec. 16 at 7:02
First quarter	Full moon
Sept. 26 at 0:50*	Oct. 4 at 2:10*
Oct. 25 at 20:42*	Nov. 2 at 14:14
Nov. 24 at 16:39	Dec. 2 at 2:30
Dec. 24 at 12:36	Dec. 31 at 14:13

gains altitude and brightness, as it climbs above the western horizon. On December 18, Mercury reaches its greatest eastern elongation, and sets an hour and twenty minutes after the Sun. On that date, a thin crescent Moon will appear just above the tiny planet — a splendid sight in binoculars!

Venus puts on a show

Venus continues to dominate the eastern morning sky with its brilliance, though its reign as the morning star is fated to end with the season. As autumn begins, the dazzling planet rises two-and-a-half hours before the Sun, but by early October, it begins to slip toward the horizon.

On October 13, Venus passes just 0.5 degrees from Saturn; and by October 15, the dazzling morning star slips between Saturn and Mercury, as it continues its descent. **On October 16**, a thin crescent Moon appears to the right of Venus with Saturn above, and Mercury below. This celestial grouping — the finest of the year — will be even better with binoculars!

Throughout the remainder of the season, Venus moves gradually closer to the horizon, and by autumn's end, the dazzling planet becomes lost in the Sun's glare where it will remain until early next year.

Mars in the evening

As autumn begins, **Mars** rises just after midnight, among the stars of Gemini, but by mid-October the Red Planet moves into Cancer and enters the late evening sky. As the season advances, Mars rises progressively earlier and gains in brightness.

On the night of October 31 to November 1, Mars moves through the Beehive star cluster (M44) at the heart of Cancer. This dramatic event, is best appreciated with binoculars: Look for the rust-coloured planet among the hot, blue stars of the Beehive. Mars completes its eastward trek through Cancer, and enters Leo on December 1. At this point, the Red Planet outshines all the neighbouring stars, making it easy to spot.

The Moon appears below Mars on the night of October 12, and again on the evenings of November 8 and December 6.

A great year for the Geminids

The annual Geminid meteor shower is expected to peak at midnight EST, on December 13 to 14, 2009. Since the Moon will not be a factor (new Moon is on the 16th), the stage is set for a spectacular show. The Geminids are, in fact, the most intense meteor shower of all. At their peak, under a clear dark sky, one should count up to 60 meteors per hour! So, brave the cold, and head for the country: It will be well worth the effort.

Jupiter in the south

Jupiter dominates the autumn sky — the brightest star-like object above the southern horizon. The giant planet has been moving in retrograde among the stars of Capricornus since mid-June, but that ends on October 13, when Jupiter resumes its normal eastward course across the heavens. Jupiter continues to be an excellent target for small telescopes: Its cloud bands add contrast to the Jovian atmosphere, and its four Galilean moons provide a constant show as they circle the planet.

The Moon appears near Jupiter on the evenings of September 29 and October 26; and again on the evenings of November 23 and December 20.

Saturn reappears in the morning

Saturn has been hidden in the glow of twilight since mid-August, but at the beginning of October, the ringed planet reappears at dawn, just above the eastern horizon among the stars of Virgo.

During the first half of October, Saturn partakes in two close planetary conjunctions (see **Mercury** and **Venus**). This is *the* planetary event of the year. Don't miss it!

The crescent Moon appears near Saturn on the mornings of October 15 & 16, and again on November 12 and December 10.

Happy observing!

Research and text: **Louie Bernstein**