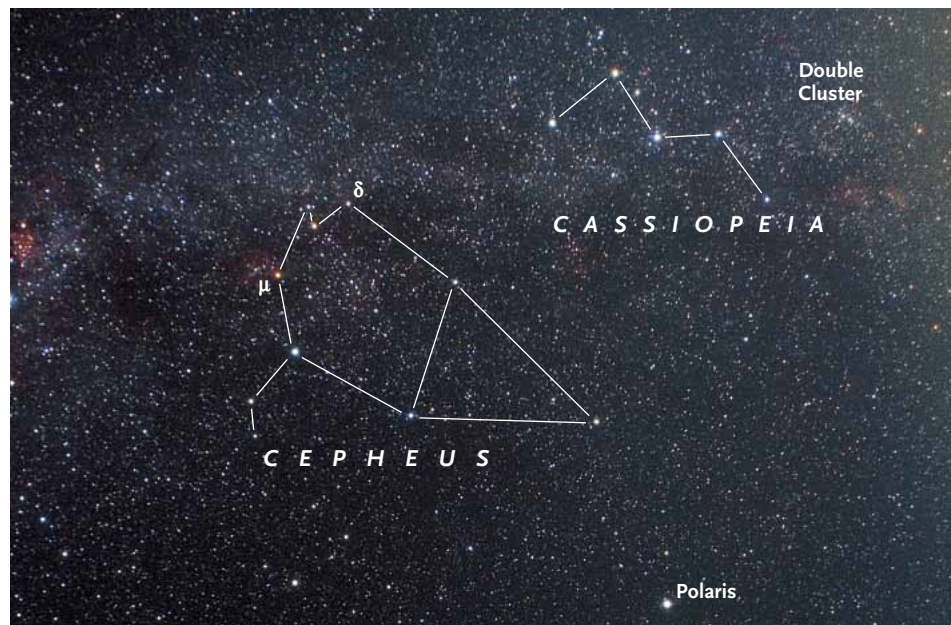


## November • King and Queen of the North

Dim Cepheus and bright Cassiopeia swing high above the north celestial pole.

**ACROSS THE SOUTHERN** heavens are now arrayed the dim, water-themed constellations of the Great Celestial Sea: Pisces the Fishes, Cetus the Whale, Eridanus the River, Aquarius the Water Carrier, Piscis Austrinus the Southern Fish, and Capricornus the Sea Goat. Higher in the south is the somewhat brighter Great Square of Pegasus. But our main topic this month will be the pair of constellations — one bright, one rather dim — that now reign very high in the north. “Reign” is the right word, for these are Cassiopeia the Queen and Cepheus the King.

In Greek mythology, Cassiopeia and Cepheus were the parents of Andromeda in the legend that centers on the exploits of Perseus, his flying horse Pegasus, and the sea monster Cetus from whom he rescues Andromeda. In this tale the vanity of Queen Cassiopeia started all the trouble, and in the heavens Cassiopeia is undeniably a bright and beautiful constellation. The shape formed by its main stars has been imagined as a throne or chair, but today’s skywatchers usually see it as a wide, flattened M when it’s high on autumn evenings or a flattened W



Face north after dark and look high to spot Cassiopeia. Her five brightest stars form a squashed letter M. Near the Queen is her dimmer husband Cepheus.

when low in the north during springtime. Along with Orion and the Big Dipper, Cassiopeia is one of the best-known star patterns in the sky.

Cepheus is much dimmer but contains several noteworthy objects. One is the pulsating variable star Delta ( $\delta$ ) Cephei, which varies in brightness from magnitude 3.5 to 4.4 and back every 5 days 8 hours 47 minutes and 32 seconds. Another is a slower, much more irregular variable star that’s unusually deep red-orange. This is Mu ( $\mu$ ) Cephei, also known as Herschel’s Garnet Star. The color of this vast red supergiant is quite apparent in binoculars or a small telescope. Some of us can even see a hint of the tint with the naked eye, unusual for a star this faint.

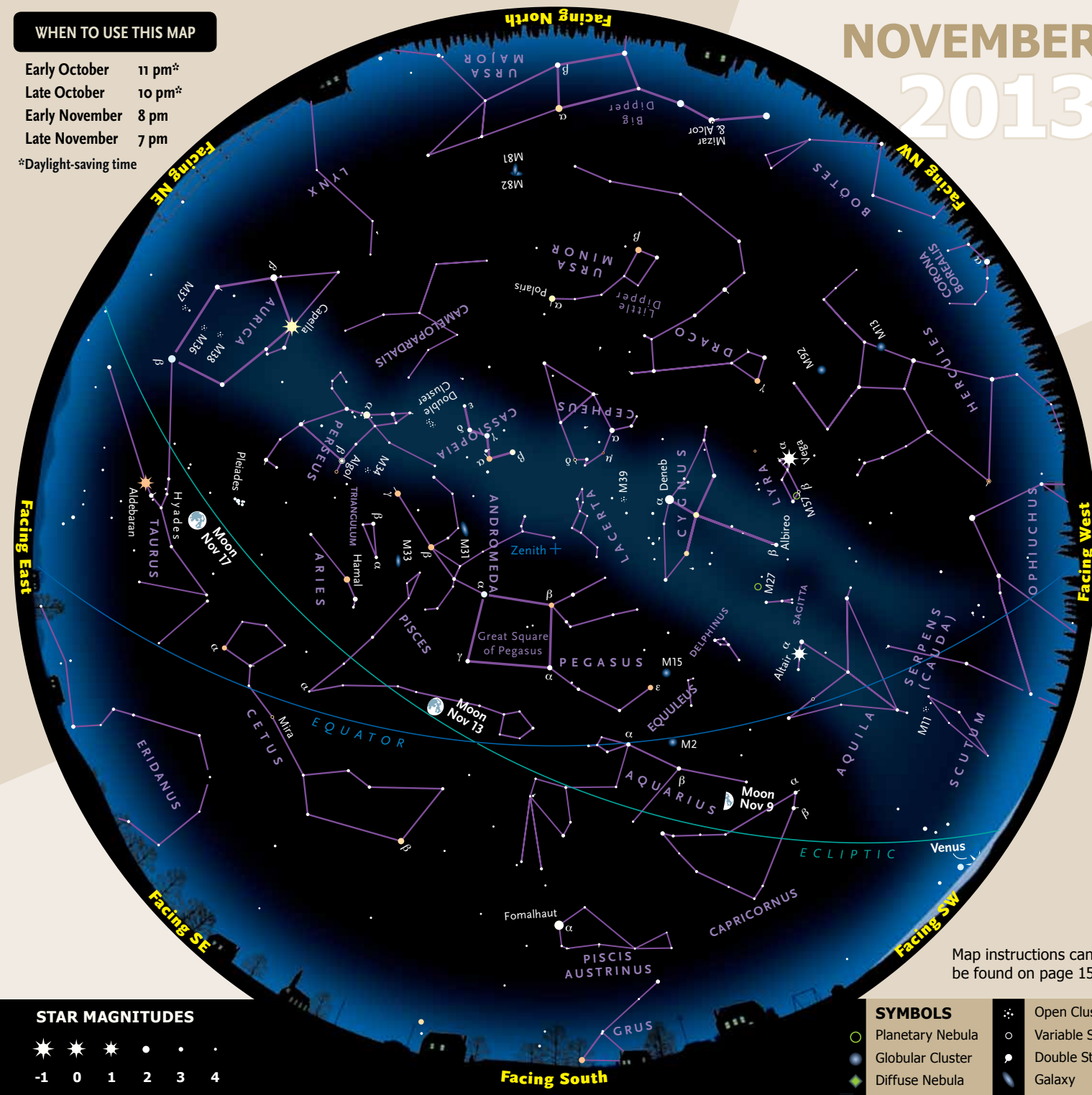
### Planets in November

**Mercury** (about magnitude  $-0.6$ ) has its best morning apparition of the year during the second half of November. Look for it low in the east-southeast as dawn brightens. Don’t confuse it with Spica twinkling above it. They’re both far below Mars and

### WHEN TO USE THIS MAP

- Early October 11 pm\*
- Late October 10 pm\*
- Early November 8 pm
- Late November 7 pm

\*Daylight-saving time



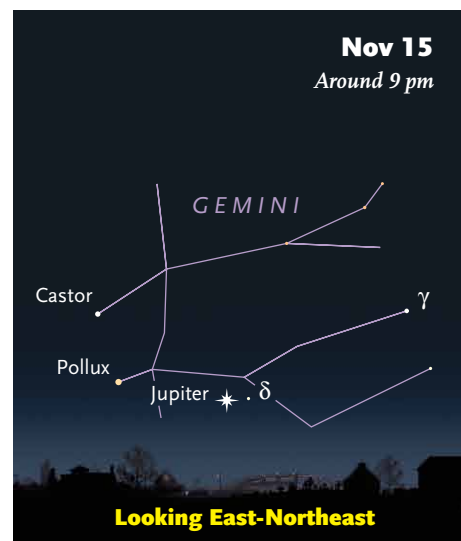
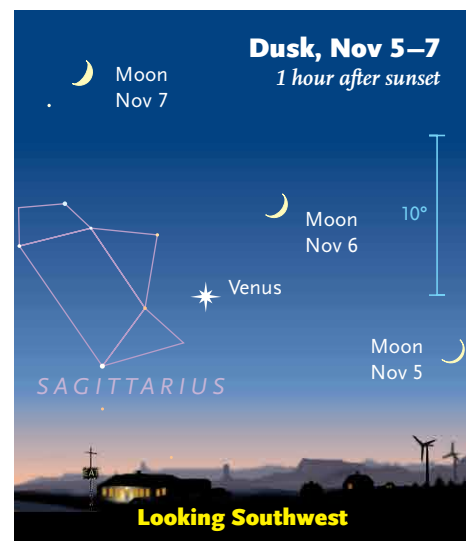
Map instructions can be found on page 15.

### STAR MAGNITUDES



### SYMBOLS

- Planetary Nebula
- Globular Cluster
- ◆ Diffuse Nebula
- ⊙ Open Cluster
- Variable Star
- Double Star
- ◆ Galaxy



perhaps a little to the left.

**Venus** (magnitude  $-4.7$ , in Sagittarius) is as high as it will get in 2013, but that’s still not very high. It’s the bright “Evening Star” shining in the southwest as twilight fades to darkness.

**Mars** (magnitude  $+1.4$ , crossing from Leo into Virgo), rises by 1 a.m. standard time and is high in the southeast by dawn.

**Jupiter** (magnitude  $-2.5$ , in Gemini) rises in midevening and shines high from midnight to dawn, dominating the upper sky of the witching hours.

**Saturn** (magnitude  $+0.5$ , in Libra) is deep in the glow of sunrise. It has a close conjunction with brighter Mercury ( $0.6^\circ$  apart) on the morning of November 26th. Try scanning for Mercury and Saturn very

low in the east-southeast as dawn brightens that morning, using binoculars or a wide-field telescope.

**Uranus** and **Neptune** (magnitudes 5.7 and 7.8, in Aquarius and Pisces, respectively) are up in the southeast and south during evening. Identify these little specks in binoculars or a telescope using the charts at [SkyandTelescope.com/urnep](http://SkyandTelescope.com/urnep).