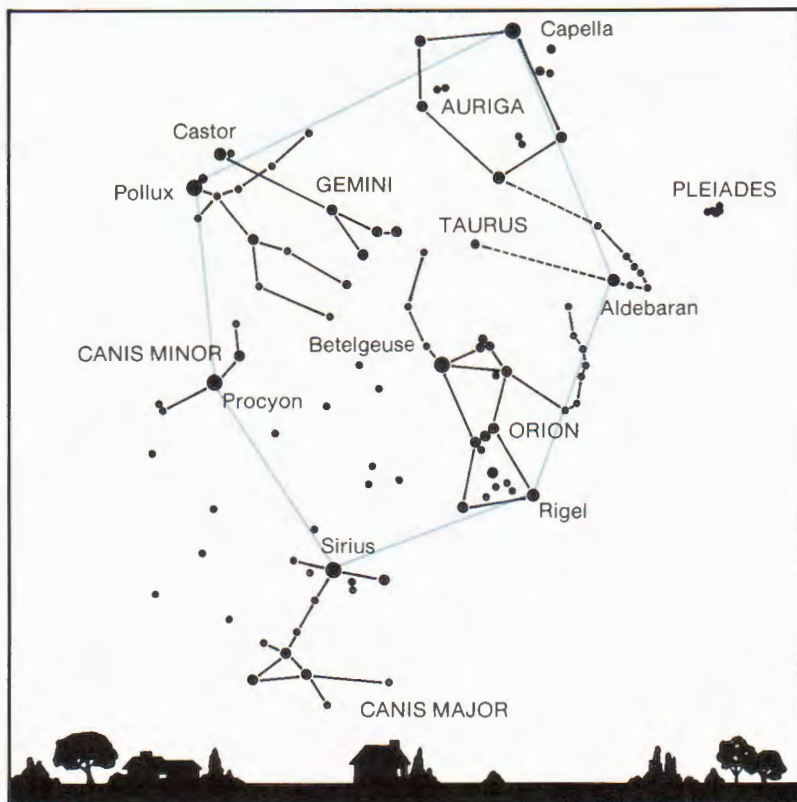


# SCOPE On the skies

## Bright Starlight



LOOKING SOUTHEAST ABOUT 9 P.M.

Do you ever think the stars seem brighter during the winter? Is it because the skies are clearer during the colder nights? Probably not. A closer examination shows there are more bright stars in the winter skies than at other times of the year. Of the twenty-one brightest stars, as viewed from Earth, one third of them can be seen during the winter months. As a group, six of them—Capella, Pollux, Procyon, Sirius, Rigel, and Aldebaran—form a star pattern known as the winter hexagon.

In locating the brighter stars, first, find the center of the hexagon, the constellation Orion. In January, Orion is located over the south-southeastern horizon as a rectangle composed of four bright stars, with a row of three bright stars in the center. Orion contains two stars that are

examples of two types of giant stars. Betelgeuse (often pronounced beetle juice), a red giant star, marks Orion's right shoulder. The blue-white color of the other giant star, Rigel, indicates that it is a much hotter, shorter-lived star. Betelgeuse's red hue indicates a cooler and longer-lived star.

Use Orion to locate other constellations. The three belt stars, at his middle, point upward toward Taurus the Bull's V-shaped face, and downward toward the brightest star in the night sky, Sirius. Sirius is one of the stars comprising the constellation Canis Major, one of Orion's hunting dogs. Follow a line from Rigel upward through Betelgeuse; it will point to the Gemini twins, Pollux and the less bright Castor.

Pursue Orion across the January sky and into mythology.



### Tales of Orion

According to legend, Orion, the son of Neptune, was a giant of tremendous strength. The arrogant giant boasted that he could kill all of Earth's animals with little or no effort. Orion's boasting angered Gaia, Goddess of the Earth, and she unleashed a large scorpion to attack and kill Orion. The scorpion, Scorpius, bit Orion, whereupon he fell to the Earth mortally wounded. However, Ophiucus, the Serpent Bearer, gave Orion an antidote and he lived to rise again on subsequent nights. Ophiucus continues to help Orion by trampling the scorpion. (This legend explains why Orion and the Scorpion are never in the sky at the same time. In fact, when Orion is in the east, his mortal enemy, the Scorpion, sets in the west along with Ophiucus who is engaged in trampling the scorpion to death.)

More familiar lore about Orion places him in a confrontation with an angry bull, Taurus. With his bull head lowered under the threatening arm of Orion, Taurus backs westward, away from Orion, never making an attack.

Above Orion and almost directly overhead, is the pentagon-shaped constellation

Auriga, the Charioteer. Auriga is easily recognized because the constellation is marked by the bright blue-white star Capella. Throughout the winter, Capella rises in the northeast preceding the rest of the pentagon.

Southeast of Orion is Canis Major, the Greater Dog, one of Orion's hunting dogs. This constellation contains the brightest star in our night skies, Sirius. The name, as derived from Greek, means brightness and heat. (Interestingly, the expression "dog days of the summer" is derived from Sirius' sky position in the hottest days of summer when it rises just before the Sun, thus blending its rays with the Sun's.)

East of Orion is his other hunting dog, Canis Minor, or the Lesser Dog. A milder-mannered dog than the fierce Canis Major, Canis Minor essentially consists of the bright star Procyon. Procyon means "before-the-dog star" because it rises before Sirius.



### Other illumination

Within the region of Taurus lie two naked-eye open star clusters (visible, loosely clustered stars)—Hyades, a V-shaped cluster marking the bull's head, with the red star Aldebaran as one eye, and Pleiades, a small, dipper-shaped group of about six stars. The Pleiades

represent the seven daughters of Atlas, and according to legend, were transformed into stars because of their grace, beauty, and charm. According to another legend, the ladies were transformed into doves by Jupiter to escape Orion's amorous advances. A mystery that has survived the ages is, "What happened to the seventh sister?"

South of Auriga, and off of Orion's right shoulder, are two roughly parallel lines, each with a bright star at the end away from Orion. This is the constellation Gemini, and the two bright stars are Pollux and Castor. According to mythology, Pollux and Castor were Jupiter's twin sons. They were well educated, and travelled with Jason on the Argonaut expedition in search of the Golden Fleece. Pollux was an excellent swordsman, while Castor excelled in horse-riding contests.

Art by Max-Karl Winkler

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### Lunar phases

Third Quarter	- January 7
New Moon	- January 15
First Quarter	- January 23
Full Moon	- January 30

**Venus** is visible in the west. It sets about an hour after the Sun.

**Mars** rises in the early afternoon and sets several hours after sunset.

**Jupiter** rises at sunset and is visible all night. It sets at about the time of sunrise.

### Correction

*Tracking Mars (from Nov/Dec).* Venus may be considered an upside-down planet only because it rotates in the opposite direction than most planets do. (It orbits in the same direction as the other planets.) Also, the y-axis (declination) of the graph plotting the retrograde motion of Mars should have been subdivided into 60, not 100, minutes.

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