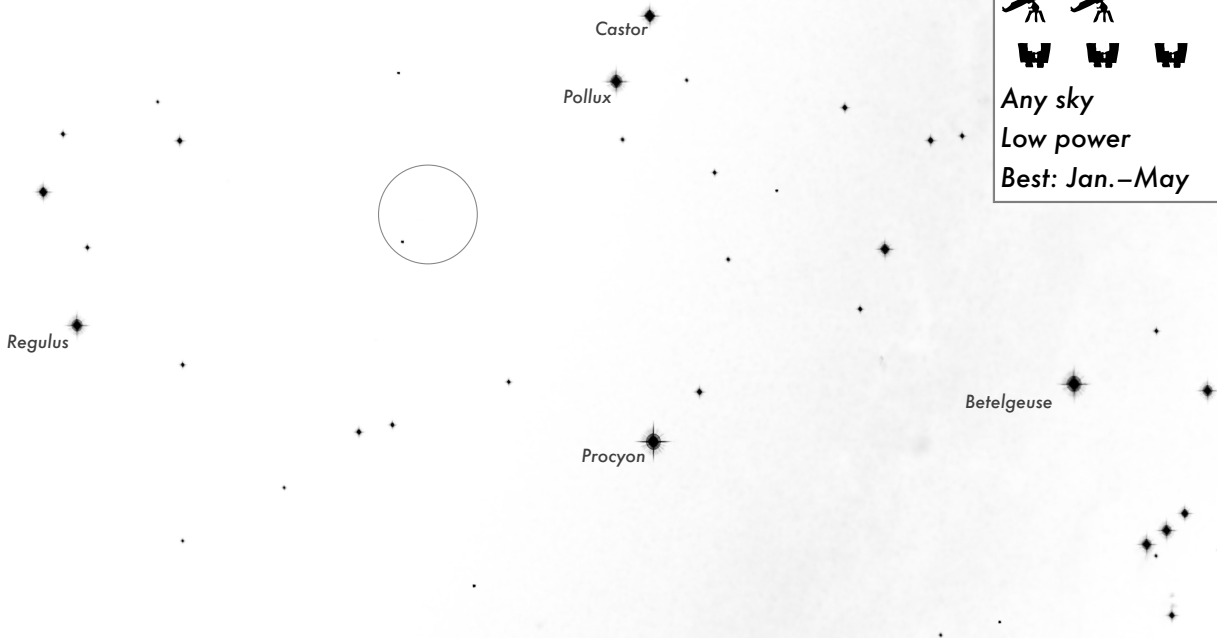


In Cancer: The *Beehive*, an open cluster, M44; and *Tegmine*, Zeta Cancri, a double star



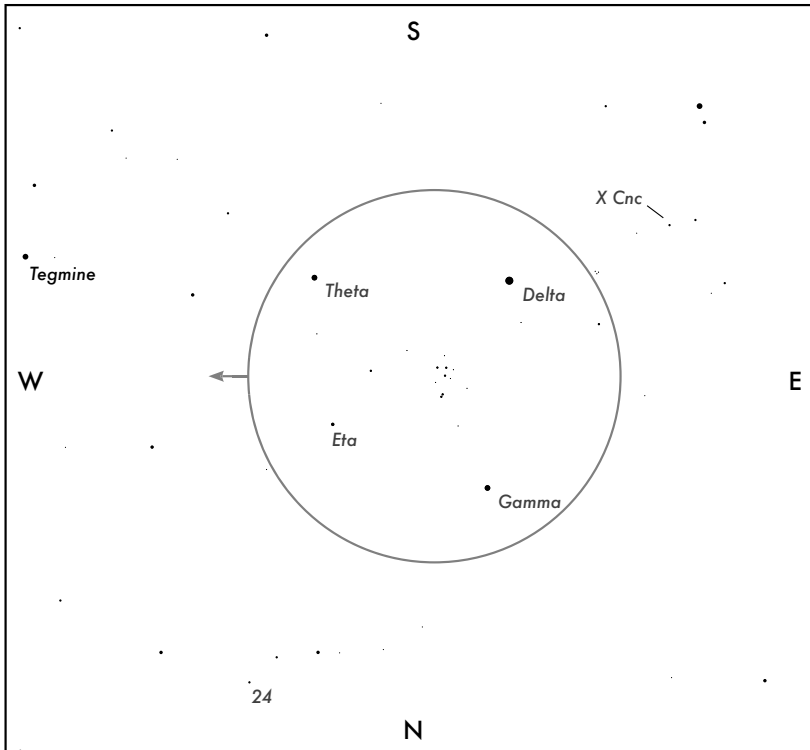
Any sky
Low power
Best: Jan.–May

Star maps courtesy Starry Night Education by Simulation Curriculum



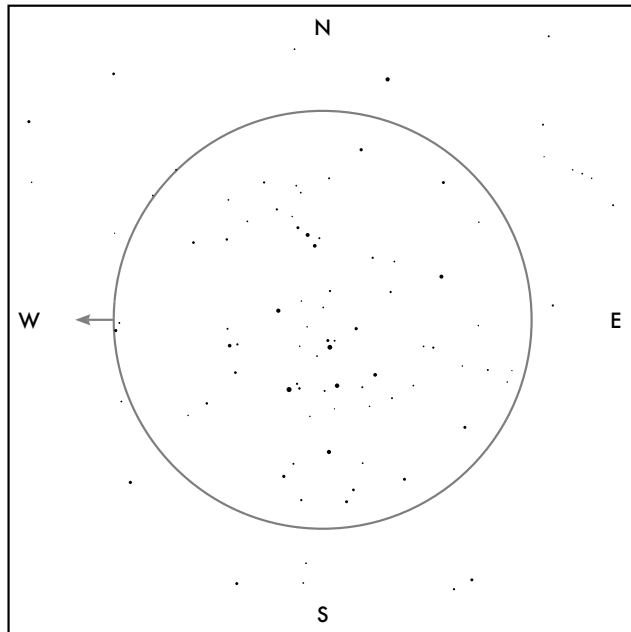
- Cluster: easy and glorious in finder, binoculars
- Subtle colors in stars – blue and yellow
- Double star: fun challenge for small scope

Where to look: Find the Twins, the very bright stars Castor and Pollux, to the west. The twin on the right (north) is the blue star Castor, the yellow one to the left (south) is Pollux. Call the distance from Castor to Pollux one step; continue in the direction from Castor, to Pollux, to three steps farther on. From this spot, turn right and go up a step. This should bring you to a spot roughly halfway between Pollux and Regulus. You should be able to see two stars, lined up north–south, Gamma and Delta Cancri. The Beehive is a tiny bit west of the midpoint between these two faint stars. On a good night it's visible to the naked eye as a small fuzzy patch of light.



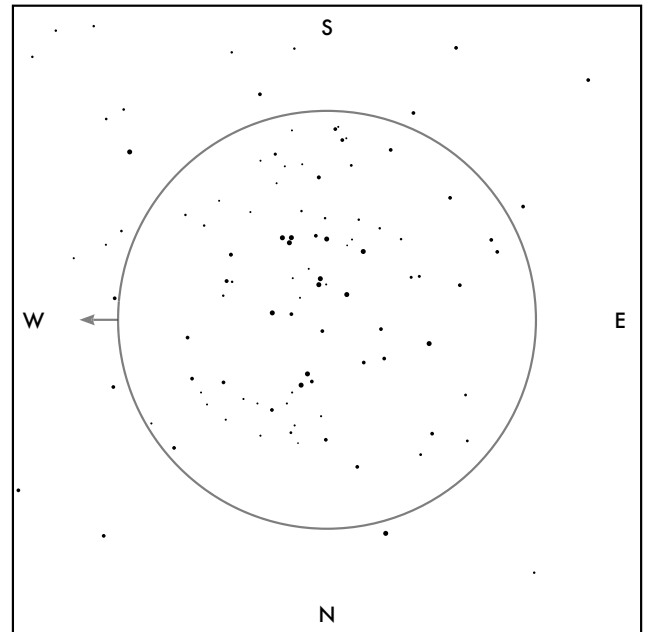
In the finderscope or binoculars: Ideal in binoculars, the Beehive should be easily visible as a lumpy patch of light between and slightly to the west of two stars oriented north and south. You will probably be able to resolve some members of the cluster in your finderscope or binoculars.

The Beehive in a star diagonal at low power



In a small telescope: About 50 stars will be visible, including many doublets and triplets. Many of these stars are quite bright, seventh and eighth magnitudes, and some of the brightest are distinctly yellow or orange-yellow class-G giants. The cluster will probably extend beyond the field of view of your telescope, unless you have a very low-power eyepiece.

The Beehive in a Dobsonian at low power



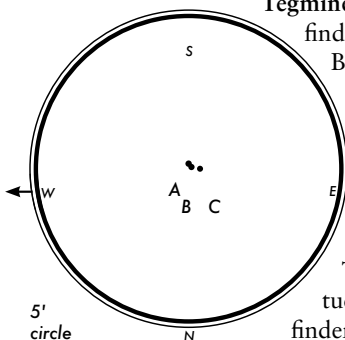
In a Dobsonian telescope: There are many bright stars visible, some with a notable yellowish color; but this cluster is just too spread out to be seen to good advantage in a Dobsonian. Any eyepiece wide enough to contain most of the cluster in a Dob will probably also show coma, a distortion of the pinpoints of starlight into smudges at the edge of a wide-angle field of view (see pages 21, 244).

M44: A big, bright cluster, the Beehive (M44) has few of the faint, barely resolved stars that add a sense of richness to other open clusters. It actually looks better in the finderscope. A couple of the brighter stars are orange; the rest are blue.

In total, this open cluster of stars consists of about 400 stars in a loose, irregular swarm. Most of the stars are in a region some 15 light years across. The cluster is located only about 500 light years away, just a bit farther from us than the Pleiades. The bright orange stars are ones that have had time to evolve into red giants. From evidence like this (see page 71 for more on open clusters and how they can be dated), one can conclude that this cluster is relatively advanced in age, about 400 million years old.

Like the Pleiades, this cluster is visible to the naked eye. It figured in Greek mythology as a manger (in Greek, “praesepe”) flanked by asses; it is still often called the Praesepe.

Tegmine: Note the four stars in the finderscope view that box in the Beehive. Step across the two southern stars, east to west, Delta to Theta, and continue another slightly larger step westward. That should carry you about five degrees west (and a bit south) of M44. There you’ll find a fifth magnitude star, reasonably bright in the finderscope, Tegmine (Zeta Cancri).



It’s a multiple-star system, with at least three Sun-like stars. In a small telescope, it will look like a magnitude 5 star with a 5.8 companion 6 arc seconds away. But the primary is itself a double star, a 5.3 and 6.3 pair separated by only 1.1 arc seconds. With steady skies you can split it in a Dobsonian at very high power. The more distant companion, Zeta Cancri C is also a close double, but too close for amateur instruments. A, B, and C are all yellow dwarf stars much like our own Sun. The system is 83 light years distant from us; A and B are only 30 AU apart, while C is 180 AU from this pair.

Tegmine (Zeta Cancri)

Star	Magnitude	Color	Location
A	5.3	Yellow	Primary star
B	6.2	Yellow	1.1" NE from A
C	5.8	Yellow	6.3" ENE from A

Also in the neighborhood: Look in your finderscope about five degrees northwest of the Beehive for a string of stars running east-west. The one star out of line, north of the string, is the magnitude 6.9 star **24 Cancri**. It’s a nice challenge in a Dob, a seventh-magnitude primary with a magnitude 7.5 companion only 5.6" to the northeast. The pair are located 250 light years from us. The secondary is actually a pair of magnitude 8.5 stars, too close together to split in a small telescope.

A reddish star east southeast of Delta, shown in the finderscope view, is the variable star **X Cnc**. It changes from magnitude 5.7 to 6.9 over a six month period.