

Southern Constellations Visible

Scorpius, now visible from the United States and lying low in the southern sky, is made conspicuous by the brilliance of the red star Antares—By James Stokley

► SEVERAL CONSTELLATIONS that are now high in the evening skies of South American countries are visible from the United States on July evenings. From southern Brazil, for example, Sagittarius, the archer, and Scorpius, the scorpion, are visible directly overhead. From the United States they appear low in the south.

The scorpion is made conspicuous by the presence of a brilliant red star, called Antares. Its hook-shaped tail curls downward to the left. Farther left is the archer, in which eight stars form the outline of a tea kettle—the spout to the right and the handle to the left.

These and other constellations visible on July evenings are shown on the accompanying maps. They depict the sky as it looks about 11:00 p.m., your own kind of daylight saving time, on July 1, an hour earlier in the middle of the month and two hours earlier at the end. However, toward the end of the month twilight will not be over, and the sky will still be quite bright at the time for which star positions are shown on the map.

To the right of Scorpius stands the faint constellation of Libra, the scales, and then Virgo, the virgin. Virgo is in the southwest and contains the bright star called Spica. This star, like Antares, is classified as first magnitude, but is shown on this Northern Hemisphere sky map as second magnitude because it is so low.

In the southeast, about half-way up the sky, you will see another star of similar brightness: Altair, in Aquila, the eagle. Above this group (half on the southern sky map, half on the northern) is Lyra, the lyre. Here is Vega, brightest star in the summer evening sky. Directly below Lyra is Cyg-

nus, the swan, from which Deneb shines.

These three stars—Vega, Altair and on Deneb—form a conspicuous triangle in the eastern sky, sometimes called the “summer triangle.”

Hanging in the northwestern sky is the familiar Big Dipper, actually part of the great bear, Ursa Major. Alkaid, at the top, marks the end of the handle. At the bottom of the bowl are Dubhe and Merak, the two pointers. A line through them to the right goes to Polaris, the pole star, which stands almost directly over the earth's north pole.

Polaris is a second magnitude star, as Dubhe and Alkaid are. There is, however another first magnitude star nearby, and the Dipper helps to find it. Follow the curved line of the handle southward, and you come to Arcturus in Bootes, the herdsman.

Not Visible to Eye

No naked eye planets are visible in July at the times for which our maps are prepared. But later in the evening Saturn appears, in Pisces, the fishes. Saturn rises about 12:30 (your daylight saving time) at the beginning of July, and about 10:30 at the end.

Also, in the first few days of the month Mercury may be seen very low in the west soon after sunset. It goes below the horizon before the sky is entirely dark.

Venus rises in the east about two hours before sunrise, and it is brighter than any other planet or star. At the end of July, Jupiter will rise in the east about an hour ahead of the sun.

Lyra, in which Vega appears high overhead on summer evenings, is one of the smallest constellations, but it

has a number of points of interest. Some of them are shown on page 517, on a more detailed map than those of the northern and southern skies. It also shows the location of Deneb, at the top of the northern cross, which is part of Cygnus, the swan. Farther south is Altair, in Aquila. The dashed line connecting Vega, Deneb and Altair outlines the “summer triangle.”

The region of Lyra represents, approximately, “where we're going.” The earth revolves around the sun in an ellipse that is almost circular, but the solar system, which includes the sun, the earth and other planets, is moving through space at a speed of about 13 miles per second. Thus, the actual path of the earth among the stars is not a circle or ellipse, but a helix, like the threads on a screw.

Nearly two centuries ago the English astronomer William Herschel discovered this movement of the solar system. He noticed that in one part of the sky (toward Lyra) the stars generally seemed to be drawing apart from one another, but in the opposite direction they were closing in. He correctly ascribed this to the sun's motion. The effect is similar to what you might see walking along a straight road through a forest. The trees ahead seem to separate as you get nearer, but as you look to the rear, the trees behind seem to come together.

The point toward which the sun is moving is called the “solar apex.” This is indicated on the diagram by a cross in a small circle. Actually it is not in Lyra, but in the nearby constellation of Hercules. However, Vega is the nearest bright star.

A little distance to the left of Vega, toward Deneb, is a fainter star marked epsilon. This is epsilon Lyrae. To most



