

ASTRONOMY

Orion Heralds Winter

Foreshadowing winter's approach, the heavenly warrior Orion appears in November's evening sky. Six of southern constellations visible are connected with water.

By JAMES STOKLEY

► THE APPROACH of winter is definitely foreshadowed in November as the constellation of Orion makes its appearance. This group of stars, which is supposed to form the figure of a warrior, is seen low in the east, as shown on the accompanying maps. These give the arrangement of the brighter stars as seen about 10:00 p. m., your own kind of standard time, at the first of November; about 9:00 o'clock at the middle of the month and about 8:00 at the end.

Perhaps the most characteristic feature of Orion is the three stars in a row that form the warrior's belt. To the left of the belt is Betelgeuse, and to the right Rigel. The former is in his shoulder and the latter in one leg, so in the position we now see him, he is lying on his back. However, when he has risen high into the south in the evening skies of mid-winter, he will be standing upright.

Above Orion is Taurus, the bull, with brilliant Aldebaran, which has a distinctly ruddy hue. To the left of Taurus, toward the northeast, is Auriga, the charioteer, in which first-magnitude Capella is seen. And just below this group we find part of the Gemini, the twins, of which the brightest star is called Pollux.

Jupiter in Pisces

High in the south these evenings is the constellation Pisces, the fishes, which contains no stars as bright as the first, or even the second magnitude, but at present is the location of the brightest celestial object visible, except for the moon. This is the planet Jupiter. On the astronomical brightness scale, it is now of magnitude minus 2.3, which means that Jupiter is some 20 times the brilliance of a typical first magnitude star. It is, of course, a planet, one of the family of bodies that revolve around the star we call the sun and of which the earth is one of the smaller members. Jupiter is the biggest, with a diameter of 87,000 miles, or about 11 times that of the earth.

To the west and southwest we find the rest of the first-magnitude stars now visible. Low in the southwest stands the figure of the southern fish, Piscis Austrinus, with the star Fomalhaut. Because it is so near the horizon, its light is dimmed by the earth's atmosphere and it does not shine as brightly as the first-magnitude star that is seen high overhead. Directly west, so that part of it is shown on the map of the southern sky,

and the rest on the one for the north, is Aquila, the Eagle, in which Altair is visible. Here also we have three stars in a row but, unlike the belt of Orion, the middle one is much brighter than the two attending it.

Above the right-hand end of Aquila we see the Northern Cross which is now standing vertically in the sky in the constellation of Cygnus, the swan. At the top is Deneb, marking the swan's tail. In fact, this star is named after the Arabic word for tail. The arms of the cross form the bird's wings, and the lower part of the upright his long neck outstretched in flight.

Below the cross and farther right is Vega, in the constellation of Lyra, the lyre.

Planets Visible in Morning

Three other planets may be seen in the east in the early morning a few hours before sunrise. Brightest is Venus, of magnitude minus four, or nearly five times as bright as Jupiter. In the same group and considerably fainter, though of the first magnitude, is Saturn, which Venus passes very closely on Nov. 21. The planet Mars, of the second magnitude, is in the next-door constellation of Leo, the lion, in the first part of November but later it too moves into Virgo.

The remaining planet that can ever be seen with the naked eye is little Mercury. At the end of November this is in the evening sky, very low in the southwest at dusk, but it will be very difficult to locate.

It is a curious fact that six of the constellations now visible, all in the southern sky, have some connection with water. Two of these are Pisces and Piscis Austrinus. Then there is Aquarius, the water-carrier, which is just above Fomalhaut. On the old star

maps, including one carved thousands of years ago in an Egyptian temple at Denderah, Aquarius was represented as an old man holding a jar from which a stream of water is flowing into the mouth of the southern fish!

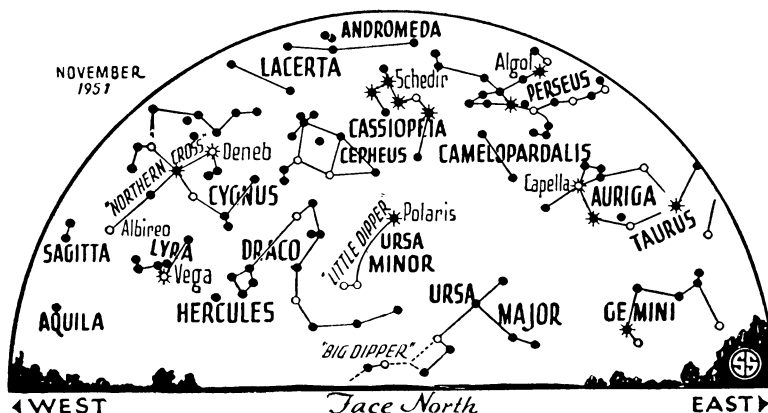
The astronomers of most ancient nations, except the Arabs, seem to have represented Aquarius in much the same way. Even among some American Indians it was known as "Kumbha," which means "the water jar." And the only reason that the Arabs differed was that their law forbade the portrayal of a human figure. Accordingly, they pictured the constellation as a mule carrying two barrels of water on his back.

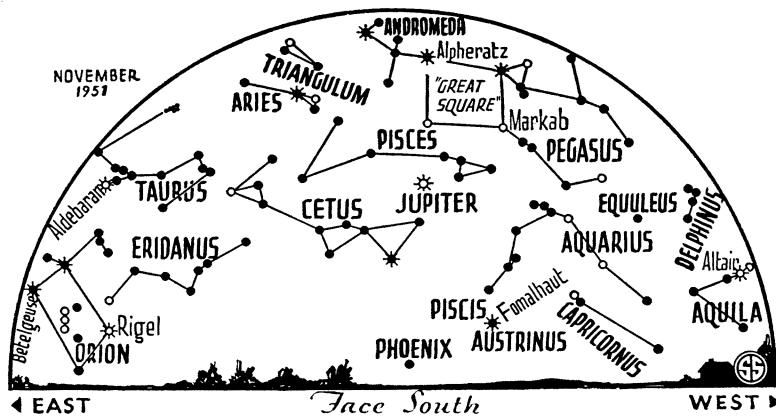
The other aquatic constellations, now visible in this part of the sky, are Capricornus, the sea-goat, to the right of Fomalhaut; Cetus, the whale, below Pisces; and Eridanus, the river, between Orion and Cetus.

One suggestion as to why this part of the sky, with all its watery significance, was made a sort of celestial sea is that the sun passed through this region, when it was established, during the rainy season of the year. In any event, it hardly seems likely that coincidence is responsible, or for the similarity of the conception of Aquarius among so many ancient peoples. It is one of the things that leads some to believe that many of the constellation figures originated in some one unknown place.

Origin of Star Names

According to Richard H. Allen's "Star Names and Their Meanings," which is the standard authority on the origin of the names, the Babylonians associated the stars of Aquarius with their 11th month, "Shabatu," or "the curse of rain," which corresponds to January and February in our calendar. Their "Epic of Creation" tells of the Deluge in the 11th book, which corresponds to this 11th constellation of the





★ ★ ○ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

zodiac, the sun's path. Other books coincide with the other zodiacal signs. Apparently they gave to the group of stars forming the water-jar in Aquarius the name of "Gu," which, says Allen, means "a water jar overflowing." To the Akkadians it seems to have been named "Ku-ur-ku," or "the seat of flowing waters."

In any event, when we look at these groups tonight, and wonder about them, we can be sure that many thousands of years ago other men did exactly the same!

Celestial Time Table for November

Nov. EST	
2	8:00 a.m. Moon nearest, distance 227,200 miles
6	1:59 a.m. Moon in first quarter
10	12:59 a.m. Moon passes Jupiter
13	10:52 a.m. Full moon
14	4:00 a.m. Venus farthest west of sun
16	early a.m. Meteors visible, radiating from constellation of Leo
18	8:00 a.m. Moon farthest, distance 251,900 miles
21	5:00 a.m. Venus passes Saturn
	3:01 p.m. Moon in last quarter
24	6:26 a.m. Moon passes Mars
25	4:58 a.m. Moon passes Saturn
	12:49 p.m. Moon passes Venus
28	6:00 a.m. Mercury farthest east of sun
30	8:00 a.m. Moon nearest, distance 223,900 miles

Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, October 27, 1951

DENTISTRY

60 Teeth in Jaws But Only Two to Chew With

► THE CASE of a child who had more than 60 teeth within his jaws but only two that erupted through the gums into chewing position was reported by Dr. Stanley A. Lovestedt of the Mayo Clinic, Rochester, Minn., at the meeting of the American Dental Association in Washington.

He cited the case as an example of the aid dentists and their patients can get from X-ray pictures.

When a child has more than the usual number of teeth, a defect in the formation of skull bones may be suspected, he said.

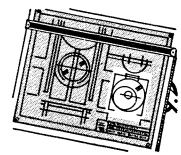
When a baby's teeth erupt earlier than is usual, the child may have some glandular disturbance. Late eruption of the first teeth also may be due to a glandular disorder. Rickets may be a contributing factor.

In a glandular condition known as hypopituitarism, which causes the bone structure to become giant size, the teeth, oddly enough, are of ordinary size.

In cases of defective or incomplete development of teeth, general causes, including vitamin deficiency, must be considered.

Science News Letter, October 27, 1951

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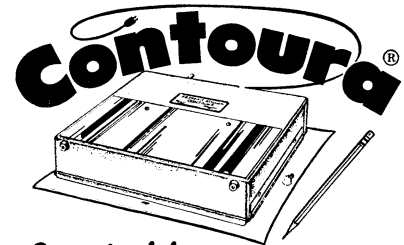
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