



High in the northwest is Andromeda's mother, the queen Cassiopeia, a familiar landmark.

tes 4 seconds. This month conditions are almost the reverse. The moon is at apogee, or farthest from earth, less than a day after the eclipse, and the sun in about a month will be at its least distance. Thus the moon now is considerably smaller in relation to the sun, and the width of the ring seen around it is almost as great as it can be.

Though but one planet appears on the accompanying maps of the December evening skies (which show them for 10:00 p. m., Dec. 1; 9:00 p. m. on the 15th and 8:00 p. m. on the 31st), two others can be glimpsed. Soon after sunset Jupiter can be seen low in the southwest. Farther east, and fainter, is the red planet Mars, but both have set by the times for which the maps are drawn. Saturn, however, is visible as shown, in the constellation of Pisces, the fishes, to the southwest.

But the winter constellations make up in glory for what the December skies may now lack in planets. These constellations are visible to the east and southeast. First comes Orion, the great warrior. The three stars in a row, supposed to represent his belt, make him easy to locate. Above and to the left is Betelgeuse, marking one of his shoulders, and on the opposite side of the belt is Rigel, in one leg.

Taurus

Above Orion is Taurus, the bull. A V-shaped group of stars, the Hyades, outline his face. Most of these are rather faint, but there is one very brilliant orb, red in color. Aldebaran it is, in the eye of the bull. High in the east is the constellation of Auriga, the charioteer, in which Capella shines. Below are Gemini, the twins, with Castor and Pollux, the latter the more brilliant.

But brightest of all stars, in fact the brightest ever seen (except, of course, the sun) is Sirius, low in the southeast, below Orion. It is in Canis Major, the great dog, one of the two dogs following the warrior Orion across the sky. The other dog, Canis Minor, is above and to the left, and contains Procyon.

Two other first magnitude stars are shown on the maps, low in the northwest, where they are vanishing from the evening skies after being conspicuous during the autumn months. Vega is near the horizon, and forms part of Lyra, the lyre. Above Vega is Cygnus, the swan, or the northern cross, as it is sometimes called. Deneb is the bright star marking the top of the cross.

Pegasus

Among the other groups that are conspicuous, though containing no stars as bright as first magnitude, is Pegasus, the winged horse, high in the west. In this is the "great square," the upper star of which is in Andromeda, the princess who was chained to the rock, according to the mythological account. Beyond her, almost directly overhead, is Perseus, the champion who rescued her. Cetus, the sea monster who tried to devour her, is conspicuous in the south.

In the north, the great dipper, part of Ursa Major, the great bear, is swinging up into the northeast with the pointers, now in the top of the dipper, indicating the direction of Polaris, the pole star. High in the northwest is Cassiopeia, the queen, Andromeda's mother.

The sun's annual motion around the sky, actually the effect of the earth's motion around the sun, brings it on December 22, at 1:22 a. m. eastern standard time, to its farthest south position, when it is directly over the tropic of Cap-

ricorn. This is the winter solstice; the beginning of winter, in the northern hemisphere. Also, for us, it marks the shortest day of the year.

Below are given the moon's phases for the month. Its changes in distance have been referred to above. On December 3 it is in apogee, at 12:00 noon, eastern standard time, with a distance, between centers, of 252,600 miles. On December 17 it will be closest, at perigee, 226,800 miles distant. December 30 will bring the second apogee of the month, at 1:00 p. m. with 252,500 miles.

Phases of the Moon

	E. S. T.
New	Dec. 2 6:11 p. m.
First Quarter	Dec. 10 8:12 p. m.
Full	Dec. 17 1:52 p. m.
Last Quarter	Dec. 24 9:20 a. m.

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PSYCHOLOGY

Persons Falling Asleep Give Clues to Mental Ills

DIFFERENT parts of the brain apparently go to sleep separately and to different degrees, Drs. H. Davis and P. A. Davis of Harvard Medical School and Drs. A. L. Loomis, E. N. Harvey and G. Hobart of the Loomis Laboratory at Tuxedo, N. Y., have found in brain wave studies (*Science*, Nov. 12). Their studies also suggest that clues to the cause of many mental diseases or abnormalities may be found in studies of the normal falling asleep process.

Four kinds of brain waves or electrical patterns appear during the going to sleep process, they found. First there is the state when the person is at rest but awake. Next follow different kinds of waves in the drowsy, "floating" state. A second intermediate state is characterized by a still different brain wave pattern and this merges into the fourth pattern found in real sleep.

Of practical importance, they point out, is the fact that the patterns of early sleep in normal persons are strikingly like those seen in some mentally sick or otherwise abnormal persons. Scientists making brain wave studies should not be misled by the pattern of an unsuspected dozing or "floating" state into diagnosing a state of mental abnormality.

This similarity suggests that many abnormal mental conditions may depend on general modifications of brain function which are fundamentally like those of normal sleep. The scientists are now investigating this possibility.

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