

ASTRONOMY

June Brings Solar Eclipse

**For the Third Time in 1935, Moon Will Hide Sun
But to See It You Must Be at North Pole at Midnight**

By JAMES STOKLEY

ONE interesting astronomical event scheduled for the month of June is, unfortunately, not visible from any part of the United States or Canada. On the last day of the month will come the year's fourth eclipse, and the third of the sun. But like all the solar eclipses of 1935, a year when there occurs the greatest number possible—five—it is not of particular scientific interest. None of them are total, and unless the moon completely covers the sun, none of the phenomena which astronomers often travel thousands of miles to see are visible.

The June 30 eclipse will be seen over a region covering the North Pole, northern Siberia, Greenland, the British Isles, Norway, Sweden and Denmark as well as a good part of the northern Atlantic Ocean. When at its height, about a third of the sun's diameter will be covered. This eclipse will have several strange features. Occurring in the arctic regions in June, it will be at the time of the midnight sun, and so the eclipse of the sun will be seen at midnight—from some parts of the earth. Also, it is first seen to the west of the international date line, while it ends to the east, and according to local time it will end the day, and even the month, before it starts! While it is Sunday to the east of the date line, it is Monday to the west. The eclipse will first be seen from a point in northern Siberia, where it will then be early Monday morning, July 1, with the sun just rising. The last point to see it will be in mid-Atlantic, where it will be sunset on Sunday, June 30.

On Saturday, June 22, the sun will reach its farthest north position in the sky—the point called the summer solstice, and marking the beginning of summer. This will happen at 3:38 a. m., eastern standard time. At this date, for people north of the tropical regions, the sun rises earliest and sets latest, so that this will be the longest day of the year. But in the southern hemisphere conditions are reversed. There it will be the shortest day, and June 22, for the people

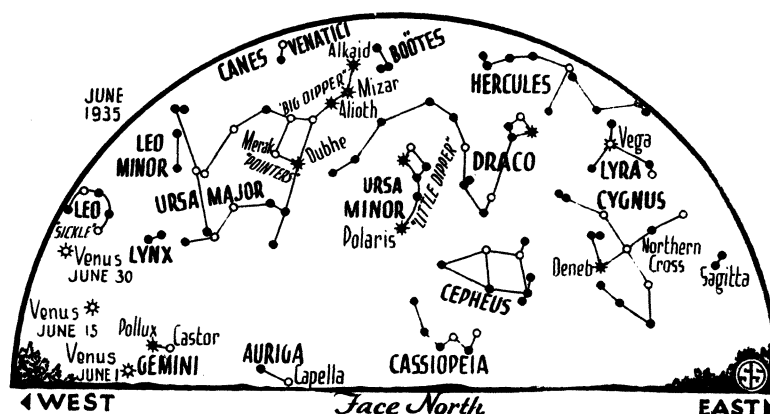
in Australia, New Zealand, South Africa and South America, marks the beginning of winter.

During June it will be interesting to watch the motions of the planets, especially Venus, as they move among the stars. At the beginning of the month it will be just below Pollux, the brighter of the twins, Gemini, as it appears in the west after sunset. It will move eastward, through Cancer, the crab, and at the end of the month will be in Leo, just to the right of Regulus. On this date it will be farthest from the sun, and therefore will be visible for the longest time in the evening, setting after ten o'clock. All this time it is drawing closer to the earth. On June 1 it is 87,270,000 miles from us, and on the 30th it will be only 65,640,000 miles away. During this same time it will continue to brighten, changing from magnitude minus 3.7 at the beginning to minus 3.9 at the end. If, at the end of the month, you look at it through a telescope magnifying perhaps 30 diameters, you will find that it looks like a half moon. Venus, like all the planets, has no light of its own but shines by reflected sunlight. Its hemisphere towards the sun is illuminated, the opposite half is in darkness, just as on the earth. On June 30, however, the hemisphere turned to the earth will include half of the bright and half of the dark sides of the planet. Through a telescope it will look like the

moon at last quarter. Next month, as more and more of the dark hemisphere is presented to us, with Venus coming between the sun and earth, it will show a crescent phase.

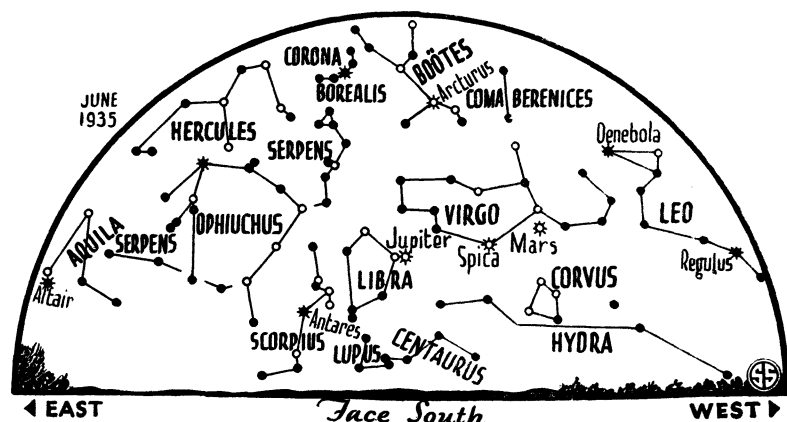
Mars is also moving through the sky, though not with the speed of Venus. On the first it will be a little to the right of the star gamma Virginis, but on the thirtieth it will be to the left, about halfway between that star and Spica. Unlike Venus, Mars is drawing away from us. When the month starts, its distance will be 75,520,000 miles, compared to 93,200,000 when it closes. As it recedes, it will get fainter, decreasing about half a magnitude during the month, but even at the end it will be quite brilliant, of magnitude 0.2, just about as bright as Vega.

Jupiter will not change greatly during the month, although it is moving slowly among the stars from east to west, in the opposite direction to that of Venus and Mars. This is only an illusion, however. Like all the planets, it moves around the sun from east to west, but considerably more slowly than the earth, as it takes about eleven years to complete the trip. At present the earth and Jupiter are on the same side of the sun, and we are overtaking it. Therefore it seems to be going backward, just as a slow freight train seems to travel backwards when you pass it in an express on the next track. Jupiter also is drawing away from the earth. On June 1 its distance will be 414,400,000 miles, and on the 30th, 439,700,000 miles. Its brightness stays at about minus 2, more brilliant than any other star or planet except Venus.



If you watch the western heavens during June you may see this most beautiful planet draw farther and farther away from the sun.

☆ * ∘ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS



75,520,000 MILES AWAY

Ruddy Mars is travelling away from us and growing fainter, but even by the end of the month it will still equal the bright star Vega in brilliance.

This month is somewhat unusual in having two new moons. One will occur, of course, on June 30, for only at the time it is new can the moon eclipse the sun. The other will happen on the first of the month. The moon's distance also changed during June. On the 8th it will be at apogee, or farthest away, at the distance of 251,150 miles. Perigee, when the moon is closest the earth, will come on the 20th, when 227,950 miles will separate us. On the evening of June 2, the moon passes Mercury at a distance to the north of less than twice the moon's apparent diameter. But this will be so soon after the moon is new and both bodies will be so near the sun, that it will be almost impossible to observe. The moon will pass Venus on the fourth, Mars on the 11th and Jupiter on the 13th. It will go by Saturn, which is seen after midnight in the east, on the 22d.

The three bright planets that came into the evening sky a few months ago are now drawing closer together, and all shine with great brilliance in the evening skies of June, along with the stars that always appear at this time of year. The brightest of all is Venus, directly west, in the constellation of Cancer, the crab. It is indicated on the accompanying maps, which show the evening skies of June as they appear at ten p. m., standard time, at the beginning of the month, nine p. m. on the 15th and eight p. m. on the 30th.

A little higher, and south of Cancer, is Leo, the lion, in which appears the bright star Regulus, at the end of the handle of the "Sickle," a smaller group forming part of the lion. Next to Leo, towards the south, is Virgo, the virgin. The bright star Spica, about 40 degrees

above the horizon in the south, is in Virgo, and, at present, so is the planet Mars. Jupiter, third planet of the June evenings, is about as high as Spica, but farther east, in Libra, the scales.

The planets are members of the solar system, bodies similar to the earth, which revolve around the sun. The stars are suns themselves, only far more distant than the one that forms the heart of our system. Vega is the brightest star that we can see these June evenings. It is in Lyra, the lyre, towards the east and about as high as Jupiter above the horizon. Just below is Cygnus, the swan, sometimes called the "northern cross," with the cross horizontal, and the star Deneb at its northern end. Altair, in Aquila, the eagle, can be seen low in the east.

Low in the southeast is another brilliant sun, Antares, part of Scorpius, the

scorpion. To the south, above Virgo, is Boötes, from which Arcturus shines. Hanging downwards from the zenith, toward the northwest, is the great dipper, in Ursa Major, the great bear. Below it, near the horizon, can be seen several stars that were conspicuous in the south a few months ago. Next to Cancer, to the north, is the part of Gemini, the twins, still remaining in view, and this part contains Castor and Pollux, the latter to the south. And still lower, farther to the north and hard to see unless you have a clear horizon, is Capella, about all that can be found of Auriga, the charioteer. Directly north can be found Cassiopeia, shaped like the letter W.

Science News Letter, May 25, 1935

PHYSIOLOGY

Doctors Okay Peppermint Candy After Heavy Meal

THE POPULAR custom of offering guests peppermint candy or peppermint cordials after a heavy meal has scientific support in the findings of four Chicago physicians, Drs. H. I. Sapoznik, R. A. Arens, Jacob Meyer, and Heinrich Necheles (*Journal of the American Medical Association*, May 18).

Tests made both on dogs and on human beings showed that the oil of peppermint that is present in peppermint candy has a decided motor action on the stomach. Digestion is speeded up, and the stomach empties an hour faster. The peppermint is particularly useful after a meal with a high fat content, making the person's stomach feel less full and distended.

Science News Letter, May 25, 1935

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