

ASTRONOMY

Venus Now Bright

Venus, outshining any other star or planet, is prominent in the west just after darkness falls and is readily visible in the twilight.

By JAMES STOKLEY

➤ **ALTHOUGH** the planet Venus does not remain visible long enough to appear on our evening sky maps, it is now a prominent object in the west just after darkness falls. Of astronomical magnitude minus 3.3, it far outshines any other star or planet and is easily visible in the twilight.

Farther to the south Mars is also visible, as shown on the map facing south. The maps depict the sky as it looks about 11:00 p.m., your own kind of daylight saving time, at the first of June, an hour earlier at mid-month, and two hours earlier at the end.

During June, Mars is moving eastward from Leo, the lion, to Virgo, the Virgin. Its magnitude is 0.7, like that of a first magnitude star but about a 40th as bright as Venus.

Among the stars now visible the most brilliant is Vega, in Lyra, the lyre. It is shown on the northern sky map, in the northeast. It is slightly brighter than Mars, although its scintillating brilliance makes it look quite different from the steady glow of the red planet. Below Lyra stands Cygnus, the swan, with another first magnitude star, called Deneb, somewhat dimmed because it is low on the horizon.

To the right of Deneb, almost directly east as shown on the southern sky map, is Aquila, the eagle with the star Altair. This star is also somewhat dimmed because it is low on the horizon.

'Rival of Mars' Also Dim

Farther right, low in the south and similarly dimmed, is Antares, in Scorpius. The name Antares means "rival of Mars," given because it also is red.

Just to the east of Mars is the large constellation Virgo, and in it you can see the star Spica. Still higher is Bootes, the herdsman, with another first magnitude star Arcturus.

Another way to locate Arcturus is to look first in the northwest, where the big dipper (part of Ursa Major, the great bear) hangs from its handle. Following the curve made by the dipper's handle on toward the south leads to Arcturus.

At the bottom of the big dipper are the pointers, Merak and Dubhe. A line through them, extended to the right, goes to Polaris, the pole star.

To the right of Mars in Leo is Regulus. Very low in the northwest are Castor and Pollux in Gemini, the twins, and Capella, in Auriga, the charioteer. A few months ago these were brilliant stars high in the

south, but now they are about to disappear from the evening skies until next winter.

A third planet, Saturn, rises in the east about midnight in the constellation of Aquarius, the water-carrier. Mercury will not be visible this month, as it will be in line with the sun and lost in its glare. Jupiter also is too close to the sun for observation until late in the month when it begins to appear as a morning star near the eastern horizon just before sunrise.

Partial Lunar Eclipse Due

The year's second eclipse is one interesting event on the celestial program for June, and it is the only one of 1965's four eclipses visible in North America. This is a partial eclipse of the moon, and it occurs on the evening of Sunday, June 13.

Only along the Atlantic Seaboard in the U.S. will the whole eclipse be visible. People in California, Oregon and Washington will not see it at all. The middle of the nation will see part of it, the amount increasing the farther east their location.

Draw a line approximately from Buffalo, N.Y., to New Orleans, La. To the east, the moon will rise before the eclipse begins.

Draw another line roughly from Williston, N.D., to Phoenix, Ariz. West of this the moon rises after the eclipse is over. Between these lines the eclipse will be in progress at moonrise.

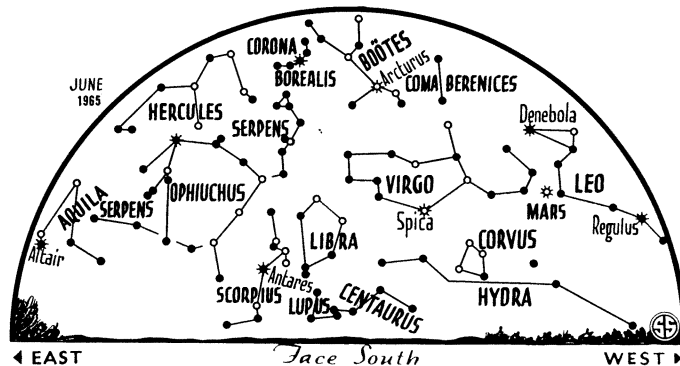
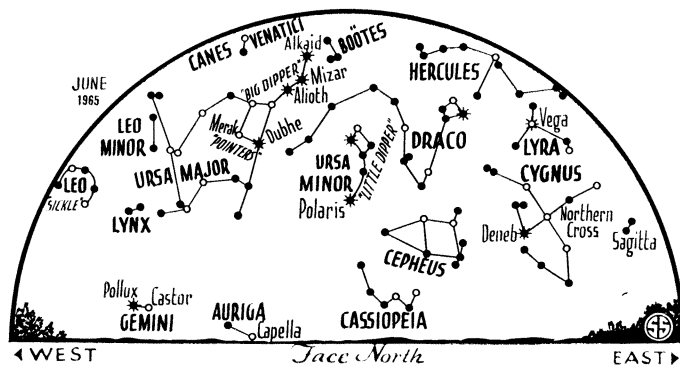
As always with a lunar eclipse, the moon enters the earth's shadow. This time, however, only a little of the moon's northern edge will enter the shadow, resulting in a partial eclipse. At the height of the eclipse (9:49 p.m. EDT) about 18% of the lunar diameter will be in shadow.

This is also the time of full moon; a lunar eclipse can occur only at that phase. The moon is full when it is opposite the sun, and the entire sunlit half is presented to our view. The earth's shadow falls in the direction away from the sun, and thus only when the moon is full can it enter the shadow. Generally when it is full the moon passes north or south of the shadow. At a total eclipse it enters completely, but that will not happen again until April 24, 1967.

Time of Eclipse Predicted

At 8:59 p.m. EDT, the northern rim of the moon first touches the edge of the terrestrial shadow. At 10:40 p.m. it leaves the shadow. Between these times, if you can see the moon, you will notice the shadow on the lunar disc. The edge of the shadow is curved, of course, since it is cast by a ball.

The shadow is not entirely dark, but has



☼ * ○ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

a coppery red color. This results from the earth's atmosphere, which acts like a prism and bends the sun's rays so that light falls into the shadow. Even at a total eclipse of the moon, with all direct sunlight cut off, it usually remains visible.

Since last Dec. 21 the sun has been moving northward in the sky. The end of this journey comes on Monday, June 21, at 10:56 a.m. EDT. The sun will then be standing directly over a point on the Tropic of Cancer in the Philippine Sea, about 900 miles due south of Osaka, Japan.

In countries north of the equator June 21 is the beginning of summer—and the longest day, as measured from sunrise to sunset. But in Australia, South Africa, Chile, and other southern countries, it is the shortest day and the beginning of winter.

Celestial Timetable for June

JUNE	EDT	
1	2:00 p.m.	Moon nearest, distance 225,000 miles
6	8:12 a.m.	Moon in first quarter noon Moon passes north of Mars
11	3:00 p.m.	Mercury in superior conjunction
13	10:00 p.m.	Full moon, partial eclipse
17	6:00 a.m.	Moon farthest, distance 252,100 miles
20	9:00 p.m.	Moon passes south of Saturn
21	10:56 a.m.	Sun farthest north, summer commences in Northern Hemisphere, winter in Southern Hemisphere
22	1:37 a.m.	Moon in last quarter
27	2:00 p.m.	Moon passes north of Jupiter
29	12:53 a.m.	New moon
	8:00 p.m.	Moon nearest, distance 222,700 miles
30	midnight	Moon passes north of Venus

Subtract one hour for CDT, two hours for MDT and three hours for PDT.

• Science News Letter, 87:330 May 22, 1965

MEDICINE

Vaccine Prospect Seen For Respiratory Disease

► HOPE for a new vaccine that may protect children from severe respiratory disease was expressed in a report on adenoviruses.

The vaccine, which will not be perfected for at least another year, would incorporate three representative strains of adenovirus, a meeting of the Association of American Physicians in Atlantic City was told.

Dr. Julius A. Kasel of the laboratory of clinical investigations, National Institute of Allergy and Infectious Diseases, Bethesda, Md., reported studies showing that the 31 adenoviruses, a "family" responsible for severe respiratory disease in children, fall into three antibody-producing groups.

Adenoviruses 1, 2, 3, 4, 5, 6 and 7 are in the three groups responsible for all forms of acute respiratory disease in children. An estimated 15% to 20% of cases of pneumonia severe enough for a child's hospitalization are caused by adenoviruses. Another dread disease in children, called pharyngo-conjunctival fever, is due to adenovirus infection.

The Federal Bureau of Prisons cooperated by permitting volunteers to take part in the study. Collaborating with Dr. Kasel were Drs. P. A. Banks, R. Wigand, Vernon Knight and D. W. Alling.

• Science News Letter, 87:331 May 22, 1965

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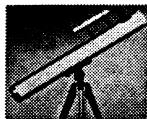
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