

## ASTRONOMY

# Summer Stars

Although Venus can still be seen early in the evening, it is drawing near the sun. Absence of planets permits the enjoyment of bright stars.

By JAMES STOKLEY

➤ NO PLANETS appear on our star maps during August, though Venus, which has been so bright in the western evening sky during recent months, can still easily be seen. However, it is drawing near to the sun, prior to disappearing from the evening skies at the end of the month. It is in the constellation of Leo, the lion, and sets before 11:00 p.m., war time, at the beginning of the month, the time for which the accompanying maps are prepared. At the middle of August the skies will have this same appearance an hour earlier. Venus is still far brighter than any other star or planet, and it is the first to appear in the west after sundown.

Venus, of course, is a planet, shining by reflected sunlight, while the stars are themselves luminous—each one a distant sun. The most brilliant star now visible is Vega, in Lyra, the lyre, which shines directly overhead at the hours for which the maps are drawn. Below, toward the southeast, is another first magnitude star, though not as bright as Vega. This is Altair, in Aquila, the eagle. Look for two fainter stars, one just above, the other just below, to help you recognize it. And below Lyra, to the east, is the northern cross, part of Cygnus, the swan. This is in the form of a cross on its side, with the first magnitude Deneb at the top, which is to the north.

## Look for the W

In a prominent place in the northeast on August evenings is the W-shaped figure of Cassiopeia, the queen of Ethiopia, seated on her throne, according to the old pictures. In a corresponding position to the northwest is Ursa Major, the great bear, part of which is best known as the great dipper. The two stars in the bowl of the dipper are the pointers. Follow them upwards and to the right, and you come to the pole star, from which you can find your direction if you are lost at night, since it is always in the north.

Following the handle of the dipper,

to the south, will enable you to find Arcturus, the first magnitude star in Bootes, the bear driver. It is a group in the west, and has something the shape of a kite, Arcturus forming part of the tail.

Another star of the first magnitude appears low in the south. It is in the figure of Scorpius, the scorpion, one of the few constellations which really look something like the thing they are named after. The curved row of stars which form the scorpion's tail curl around in a very scorpion-like manner. Antares, red in color, marks the heart.

You have to stay up late this month to see the other planets. About midnight Mars rises, in the constellation of Taurus, the bull. A little later it is followed by Saturn in the same constellation. Jupiter, brighter than either, is in Cancer, the crab, and appears about an hour before sunrise. Mercury during August is not in a favorable position to see.

August this year brings two eclipses, neither visible from North America, however. The first, an annular eclipse of the sun, at the very beginning of the month, was discussed in this article for July. Two weeks after this, as the moon has moved around the earth from a position towards the sun to one opposite to it, there comes another eclipse, this time of the moon. On August 15 the moon will partially enter the shadow of the earth, thus producing a partial lunar eclipse, about 88% of the moon's

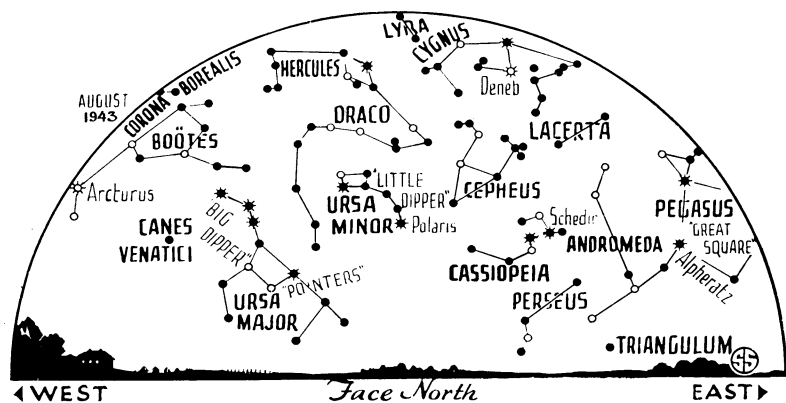
diameter being shaded by the earth.

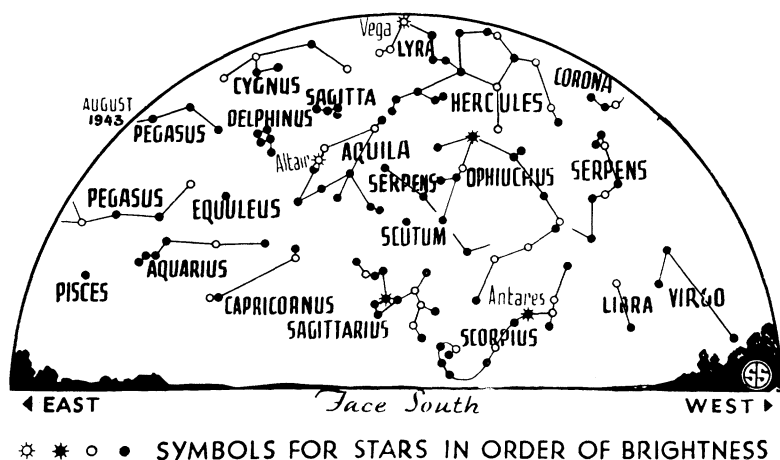
Since this eclipse, as it begins, will be visible over the western Pacific, Asia, Australia, New Zealand and, at the ending, in much of Asia and Australia, Europe and Africa, it will be seen by most of our fighting forces overseas. To them the moon will assume the peculiar red color which is characteristic of a lunar eclipse. This is the result of the bending of sunlight by the earth's atmosphere into the shadow. As it passes through the atmosphere blue light is scattered, and the light that penetrates is predominantly red.

On any clear dark night it is possible to see one or two shooting stars an hour, especially after midnight. These are not really stars, but are meteors, small bits of cosmic dust that enter the earth's atmosphere, and on account of friction with the atmosphere are burned up and vanish in a flash of light. The reason that we see more after midnight than before is because then we are in the part of the earth that meets the meteors head-on. Those before midnight have to catch up to us.

## August Meteors

At certain times of year, there are meteor showers, when the earth enters a swarm of these bodies. One such shower occurs in August, about the twelfth, and this is called the Perseid shower. The reason for this is that they seem to radiate from the constellation of Perseus, the champion, which rises in the northeast about midnight. Actually, the meteors are moving through space in parallel paths, but these seem to converge in the distance, like the parallel lines of a long straight tunnel, or a pair





☆ \* ○ ● SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

of railroad tracks. As a result, in the early morning of August 12, you may be able to see about a meteor a minute. Fortunately, this year the moon does not greatly interfere. It is then about eleven days old, between the first quarter and full, and sets about 1:30 a.m., so after that, the sky will be dark, and the meteors will shine without any serious competition.

Meteor observation is a task in which many amateurs help the professional. One thing that he wants to know is the number of meteors seen. A count by half hourly periods, i. e., from midnight to 12:30, 12:30 to 1:00 a.m., 1:00 to 1:30, etc., is helpful. One astronomer who is glad to receive such reports is Dr. Charles P. Olivier, of the University of Pennsylvania and president of the American Meteor Society, whose address is Flower Observatory, Upper

Darby, Pa. In reporting such data, give the location from which you observed, and also a statement of the extent of cloudiness during the period you watched.

#### Celestial Time Table for August

Aug.	EWT	PHENOMENON
4	4:26 a.m.	Moon passes Venus.
8	11:26 p.m.	Moon in first quarter.
12	early a.m.	Meteors of Perseid shower.
15	4:00 a.m.	Moon nearest: distance 222,100 miles. Partial eclipse of moon (see text).
	3:34 p.m.	Full moon.
22	11:37 a.m.	Moon passes Mars.
	12:04 p.m.	Moon in last quarter.
24	2:29 p.m.	Moon passes Saturn.
28	3:00 a.m.	Moon farthest: Distance 252,-300 miles.
	4:34 p.m.	Moon passes Jupiter.
29	1:00 a.m.	Mercury farthest east of sun.
30	3:59 p.m.	New moon.
31	2:00 a.m.	Moon passes Venus.

Subtract one hour for CWT, two hours for MWT, and three for PWT.

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#### PHYSICS

## Need Uniform Standards

Latin-American countries are now being surveyed in effort to develop inter-American standards for the goods of everyday life.

➤ HOW the good neighbor policy is being extended to develop inter-American standards for the goods of everyday life was disclosed to the American Institute of Electrical Engineers meeting in Cleveland by Alberto Magno-Rodrigues of the American Standards Association.

The metric system of measurement, using centimeters and grams instead of inches and ounces, has been one of the biggest obstacles in adopting mutual standards between countries. Germans and other Europeans who use the metric

system along with the Latin-Americans have long capitalized on this advantage.

Mass production, which makes standardization so valuable, now reduces the importance of the unit of measurement, Mr. Magno-Rodrigues explained, as compared with the specified size of the product. This makes the "go" and "not go" type of gauge popular over the inspector's scale and micrometer formerly used.

"The acceptance of the 25.4 ratio for the conversion of the inch to millimeters," the engineers were told, "is also

helping to pave the way for better understanding between the groups of nations who use different systems of weights and measures."

An Inter-American Department of the American Standards Association has been formed which is now conducting a survey among South American standardization groups and business men.

This country's experience in formulating standards for the goods of commerce is being used by a committee of Chinese technical men now in this country. They are formulating standards with an eye on the postwar period as part of a study of the economic rehabilitation of China.

More active cooperation with Mexico is also developing since a Department of National Standards was formed out of the old Department of Weights and Measures.

In Peru a project is under way to establish an official standardizing body for the first time. Chile expects to have a similar group in the near future, either sponsored by the engineers or under government support.

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#### RESOURCES

### Stove Shortage May Be Eased By Ceramic Heater

➤ SHORTAGE of heating stoves, developing due to lack of metals, may be eased by ceramic heaters designed at Ohio State University under the supervision of Prof. George A. Bole of the Engineering Experiment Station.

Successful stoves require careful blending of the raw clays, Prof. Bole explains, and more than one type of mixture is needed to make a completed stove.

Designs have already been developed to the point where manufacturers can take over, as a result of the research project initiated at the suggestion of the War Production Board.

Planned as a war measure, the new stoves made of non-strategic materials might also find a place in the post-war era, ceramic experts believe. Members of the Ohio Ceramic Industries Association met July 23 to discuss manufacture of the heaters.

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#### ● RADIO

Saturday, Aug. 7, 1:30 p.m., EWT

"Adventures in Science" with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. Paul Weiss, zoologist of the University of Chicago, will discuss the possibility of establishing nerve banks.