

ASTRONOMY

# Three Planets On View

Jupiter joins Venus and Saturn on January evenings; brightest of all is Venus, which remains visible until about 9:00 o'clock.

By JAMES STOKLEY

► WITH THE OPENING of a new year, three planets are on view in the evening sky. Brightest of all is Venus, which remains visible until about 9:00 o'clock or later. Its great brilliance (nearly minus four on the astronomer's scale) makes it exceed many-fold any other star or planet that is in the sky, so as you look toward the west as twilight fades, there is little doubt as to where Venus is. However, it does not remain in the sky long enough to find a place on the accompanying maps, as they depict the appearance of the heavens at 11:00 p. m., war time, on Jan. 1, and an hour earlier at the middle of the month.

One planet is shown on them, however. This is Saturn, which is in the constellation of Gemini, high in the south. It is in the middle of the most brilliant collection of stars in the heavens, but, with magnitude minus 0.2, it easily holds its own, for of this group only Sirius, in Canis Major, the great dog, exceeds it. Nearly as bright is Capella, in Auriga, the charioteer, which stands almost overhead. Rigel, the bright star in Orion to the south of the three stars that mark the warrior's belt, is just a tenth of a magnitude fainter than Capella, though the fact that it is lower in the sky, and therefore more of its light is absorbed as it passes through our atmosphere, makes it seem still fainter.

Next in order of brightness, and a little fainter than Rigel, is Procyon, in Canis Minor, the lesser dog. Then comes Betelgeuse, the reddish star in Orion to the north of the belt, though this is a variable, and may become about as bright as Capella. On the other hand, it may drop to the brightness of Aldebaran, the red star in Taurus, the bull, which is to the right of Saturn, and is the next in our ranking by magnitude. Pollux, high in the east, the lower and brighter of the two stars that mark the twins, Gemini, then comes in last place of this brilliant array of first magnitude stars in and around the figure of Orion.

Two other stars that are classed among the first magnitude are also shown, but both are too low to make them appear

in full brilliance. One is Regulus, in Leo, to the east, and the other is Deneb, about all that remains in sight of Cygnus, the swan, near the northwestern horizon.

The third planet of our January evening sky appears about 11:00 p. m. This is Jupiter. It is in the direction of the constellation of Virgo, the virgin, which is not shown on the maps, but is next-door to Leo, which is shown. Jupiter, with magnitude minus 1.8 is a little brighter than Sirius, though still considerably fainter than Venus. But since Venus has vanished before Jupiter appears, it will then be the brightest star or planet that is visible.

As for the other naked eye planets, Mercury may be glimpsed briefly in the east, a short time before sunrise, around Jan. 12, for then it reaches greatest western elongation, when it rises about an hour before the sun. Mars is in Sagittarius, the archer, in nearly the same direction as the sun, so it is not visible at all in January.

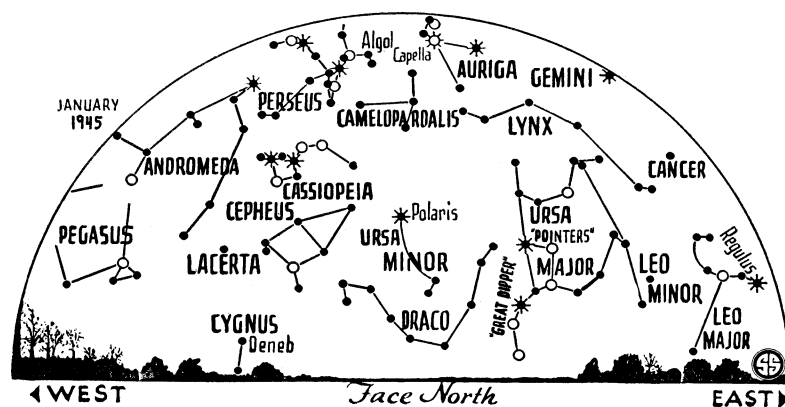
It is impossible for a year to pass without at least two eclipses of the sun. The new year brings us the minimum number, but while one of them will probably have a number of observers, the first, which happens on Jan. 14, will attract relatively little scientific interest.

An eclipse of the sun occurs when the moon's shadow is directed toward the earth. This shadow, however, is quite different from the one cast by your body when you enter a dark room carrying a candle. You are a great deal bigger than the source of light—the candle flame—

and so the lines forming the shadow diverge. The shadow cast on a wall, therefore, may be greatly magnified. Because the sun is many times larger than the moon, its shadow comes to a point, at a distance approximately equal to that of the earth. Sometimes, when earth, moon and sun are exactly in line, the tip of the lunar shadow does reach us, and then we have a total eclipse, while on other occasions the tip fails to reach the ground.

This is what happens Jan. 14. Then, to a person in the path along the earth to which the tip of the shadow points, the moon will come in front of the sun but will not entirely cover it. Because the moon's apparent size will then be a little less than the sun's, there will be visible a ring of sunshine around the dark lunar disk when the eclipse is at its height. That is why it is called an "annular" eclipse, since "annulus" is the Latin word for "ring." Because part of the sun's disk continues to shine the faint solar corona and other features for which astronomers travel thousands of miles to see at a total eclipse are not visible.

For the eclipse on the 14th, the path along which the annulus will be visible starts on the Indian Ocean coast of South Africa, travels eastward until it passes over the Bass Strait, which separates the southern tip of Australia from the island of Tasmania. The path then goes north of New Zealand, and comes to an end in the South Pacific Ocean. There is very little land in this path, but over a much larger region, including much of the Indian Ocean, Antarctica, New Zealand and Australia, there will be a partial eclipse, where the moon will hide part of the sun. This will be seen in part of New Guinea as well, and many of our soldiers in the South Pacific theater will



# Do You Know?

A sulfate plant is in operation at Osijek, Yugoslavia, to produce fertilizer, and also copper sulfate needed by grape growers.

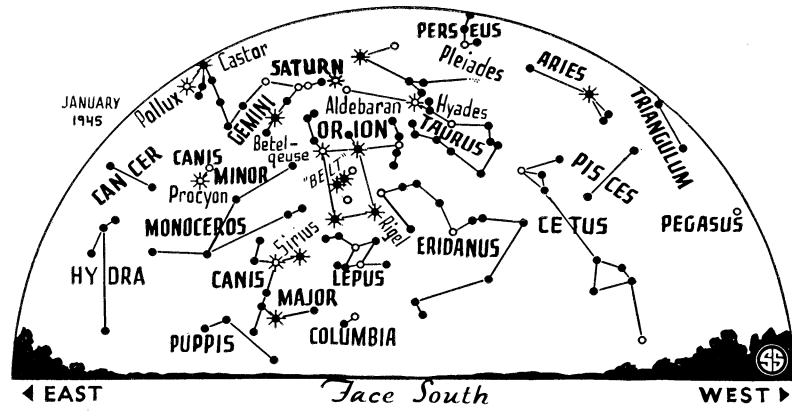
Eggs from two to four weeks old make more tender angel food and sponge cakes than do fresh eggs, the University of California claims; but spoiled eggs must not be used.

Mexican regulations require that cars be kept idle one day a week to conserve tires; a windshield sticker on each car shows the day it is not to be used.

The total capacity of chick hatcheries in the United States increased 27% in the past six years, but the total chick output increased 105%.

Two rare metallic elements, germanium and gallium, have been found in flue dusts from certain chemical works in England in quantities large enough to be a possible commercial source.

A pigmy forest near Fort Bragg, Calif., covering over 30 square miles of pine barrens with an acid soil, contains mature trees many of which are not over a foot high; they are cypress, and pine with miniature cones.



◀ EAST Face South WEST ▶  
\* \* ◦ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

get a glimpse of this annular eclipse.

The second eclipse of the sun comes on July 9. This one is total, and is much more conveniently placed. In fact, it will be visible partly in the United States, the first we have experienced since August, 1932, when the path of a total eclipse crossed New England. The tip of the shadow in July will fully reach the ground, first at a point just east of Boise, Idaho, just as the sun is rising there. Then it crosses Butte, Mont., where the total phase will occur quite early in the morning. It travels northeastward, across Canada, to the shore of Hudson Bay, where the total phase will last about 47 seconds. Here the sun will be fairly high, and it might be a good place for observers from the United States and Canada to go and see it. The path then goes to Greenland, where totality occurs about 11:00 a. m., and lasts about a minute and 14 seconds. This region, which used to be one of the most inaccessible in the world, is now reached daily by planes of the Air Transport Command, so it may be a place for many observers. From Greenland, the path goes to Norway, Sweden, Finland and Russia. The shadow leaves the earth east of the Sea of Aral, in Siberia, just as the sun is setting there. Russian astronomers have been very active in recent years, despite the distractions of war, and they will probably be located at a number of stations along its path within their borders, even though the longest duration they will have for the total eclipse will be only slightly over a minute. Over practically all of North America and Europe, as well as parts of Asia and Africa, there will be seen a partial eclipse.

The new year also brings two eclipses of the moon. The first, a partial one, comes on June 25, and will be visible over a region generally similar to that of the partial solar eclipse in January. But the second, on the night of Dec. 18, will be

total and that will be visible throughout the United States and Canada, as well as the rest of North America and South America, so it will undoubtedly attract a lot of attention.

### Celestial Time Table for January

Jan.	EWT	
1	7:00 p. m.	Earth nearest sun, distance 91,314,000 miles.
4	4:21 p. m.	Moon passes Jupiter.
5	4:00 p. m.	Moon farthest, distance 251,320 miles.
6	1:47 p. m.	Moon in last quarter.
12	4:12 a. m.	Moon passes Mercury.
	11:00 p. m.	Mercury farthest west of sun.
14	1:06 a. m.	New moon — annular eclipse of sun.
17	10:02 a. m.	Moon passes Venus.
	1:00 p. m.	Moon nearest, distance 228,200 miles.
20	7:48 p. m.	Moon in first quarter.
25	1:34 p. m.	Moon passes Saturn.
28	2:41 a. m.	Full moon.

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

Science News Letter, December 30, 1944

### MEDICINE Gallbladder Colic Pain Relieved by Asthma Drug

►THE EXCRUCIATING pain of an attack of gallbladder colic can be quickly relieved by a medicine already known for the relief it gives in angina pectoris and bronchial asthma, Dr. Arthur Gladstone and Dr. Louis Goodman, of the University of Vermont College of Medicine, report. (*Journal, American Medical Association*, Dec. 23).

The medicine is called theophylline ethylenediamine or aminophylline. It is given by slow injection into the patient's vein and has relieved patients on whom morphine had no effect. The Vermont doctors believe that its pain-relieving effect is due to its relaxing or antispasmodic action on the muscles of the biliary tract and perhaps on the gallbladder itself. It is not a cure for gallbladder disease but the Vermont scientists believe its pain-relieving potentialities in gallbladder colic have been overlooked.

Science News Letter, December 30, 1944



## LANGUAGE IS POWER

... Forge ahead, win special assignments, promotion, better job in global peace time opportunities through ability to speak a foreign language.

**MASTER A NEW LANGUAGE quickly, easily, correctly by LINGUAPHONE**

The world-famous Linguaphone Conversational Method brings voices of native teachers INTO YOUR OWN HOME. You learn the new language by LISTENING. It's amazingly simple; thousands have succeeded.

**HOME-STUDY COURSES IN 29 LANGUAGES**  
Send for FREE book—

**LINGUAPHONE INSTITUTE**  
31 RCA Bldg., New York 20 • Circle 7-0830

---

LINGUAPHONE INSTITUTE,  
31 RCA Bldg., New York 20, N. Y.  
Send me the FREE Linguaphone Book.

Name :.....  
Address..... City.....  
Language Interested.....