

ASTRONOMY

Planets Now Returning

Seldom-Seen Mercury Will Make a Brief Appearance About May 7; Jupiter Visible Throughout the Month

By JAMES STOKLEY

AFTER several months in which planets were absent from the evening sky, seldom-seen Mercury appears for a few days about May 7. All through the month Jupiter will be visible. The accompanying maps are intended to show the appearance of the skies at 10:00 p.m. at the beginning of the month, 9:00 p.m. at the middle, and 8:00 p.m., at the end.

On May 7 they show them as they are about 9:30. Mercury has set by that time, so it is not indicated. However, it should be easily visible soon after dark, in the northwestern sky, close to the horizon. It will then be about as high as Aldebaran, the red star marking the eye of Taurus, the bull, but farther north, and a little brighter. The map shows Capella, the bright star in Auriga. Taurus is just below.

Jupiter is in the constellation of Ophiuchus. At the beginning of the month it rises in the southeast, a little after ten o'clock, but at the end it appears at just about eight, so it is placed on the map for that date. There will be little difficulty in finding it since its magnitude is minus 2, brighter than any other star or planet now visible at any time in the night. Saturn rises at about 2:30 a.m., as a morning star, while Venus and Mars are too close to the sun to be seen at all.

Familiar Guide

The most conspicuous of the spring-time stars may be easily found from the Great Dipper, now high in the north. The handle of the dipper curves around to the southeast, and if you follow its curve, you soon come to the bright star Arcturus, in the constellation Bootes. Still farther, and almost directly south for the times of the maps, is Virgo, the virgin, with the star Spica. On the map the pointers, the two stars of the bowl of the Dipper farthest from the handle, are indicated. The arrow points toward Polaris, the pole star. By following them in the opposite direction, towards the south, you are brought to the sickle, part of Leo, the Lion. The star at the end

of the handle of this implement, just now in such wide use, is Regulus.

To the west and northwest three other first magnitude stars can be seen, the only remainder of the brilliant stellar display of winter. Directly west is Canis Minor, the little dog, with Procyon; just north is Gemini, the twins, with Pollux to the south; still farther north is Auriga, the charioteer, with Capella.

Taking the place of these, some other groups, that will be conspicuous in the summer evenings, are now making their appearance in the northeast. The brightest star in that direction is Vega, part of Lyra, the lyre. Above it is Hercules, and below is Cygnus, the swan, with the first magnitude Deneb.

Scorpius in Southeast

Another summer evening group now beginning to appear is Scorpius, the scorpion, low in the southeast. Until late in the evening only a small part is visible, but it is the part that contains its brightest star, Antares, which marks the scorpion's heart. Its red color makes it easy to identify, and there will be no difficulty in mistaking it for Jupiter, because that planet is much brighter, and rises a little later.

The map shows the location of Centaurus, low in the south, but the stars

of this constellation visible from most of the United States form only a small and inconspicuous section. From the extreme southern parts of the country, where the latitude is less than 30 degrees, its most brilliant stars, alpha and beta Centauri, are seen above the horizon. The former is conspicuous because it is the nearest naked-eye star, at a distance so close that its light, traveling 186,000 miles every second, takes only 4.2 years to reach us.

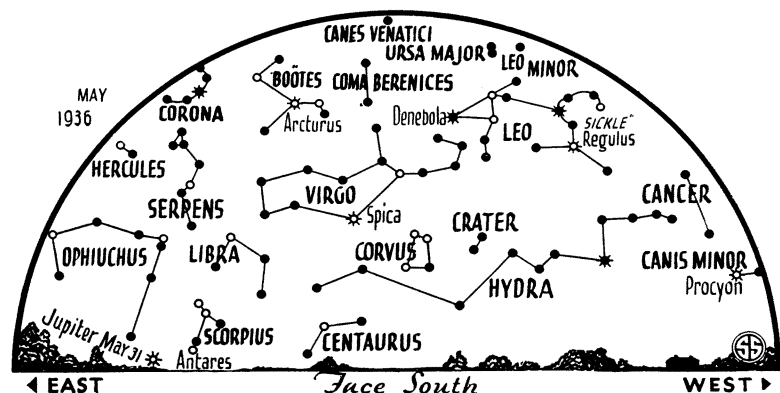
Shy Mercury

When Mercury reaches its greatest distance to the east of the sun on May 7, and is seen for a few days before and after that date, we can look at a planet relatively few people have ever seen, and one that has long been a source of mystification. Mercury is only 36,000,000 miles from the sun, instead of 92,900,000, the distance of the earth. It will then be 79,752,000 miles from earth.

When farthest east of the sun, as this month, it follows that body and is visible for a short time in the early evening. Then it comes almost in line with the sun and is not visible, but later it is to the west, when it rises before dawn as a morning star.

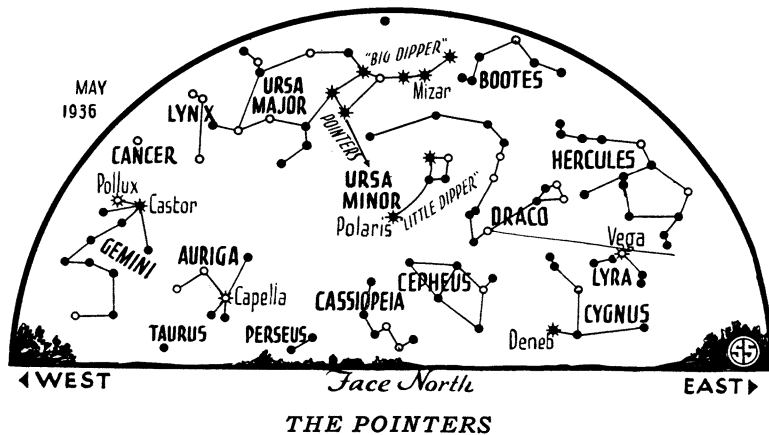
The ancients noticed it in both positions, but supposed that they were looking at two separate planets. The one they saw in the morning they called Apollo, that of the evening, Mercury.

☼ * ○ ● SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS



RETURNING ONCE MORE

Low in the southeast during the coming month, you may see the planet Jupiter, first of the planets to return to the evening skies.



Do you know all the stars that can be located through that helpful landmark, the familiar Great Dipper? Follow the pointers to Polaris, the navigator's friend. Follow the handle to bright Arcturus.

The outstanding problem concerning Mercury today is whether or not it has an atmosphere. Theoretically, it cannot possess one. For every planet there is a certain "velocity of escape," a speed at which an object thrown upwards will leave the planet entirely. For the earth this is about seven miles a second, and this applies not only to objects like stones or bullets, but also to molecules, such as those forming the gases of our atmosphere. These molecules are in rapid motion, but they seldom attain this velocity, otherwise they would fly off into space and the earth would lose its air.

Mercury's Mass Less

But the mass of Mercury is about a twenty-fifth that of earth, its gravitational pull is less, and there the velocity of escape is only 2.2 miles per second. Because Mercury is close to the sun, its temperature is much higher than ours, and this would make the molecules move faster. Consequently, it is argued, they would often move fast enough to leave the planet's attraction, and therefore Mercury must have lost its original atmosphere ages ago.

However, there is observational evidence to the contrary. Dr. E. M. Antoniadi, a famous planetary observer connected with the Paris Observatory, has reported seeing clouds on Mercury. An English amateur, H. McEwen, director of the Mercury and Venus Section of the British Astronomical Association, claims to have confirmed the Frenchman's conclusions. And if there are clouds, there must be some atmosphere to hold them.

In just a year, it may be possible to test the accuracy of these data. At rather rare intervals, Mercury passes directly

between the sun and earth, when it can be seen as a dark spot on the solar surface, when it is examined with a telescope equipped with proper protection for the eyes. Usually, when the planet is on the side of the sun towards the earth, it is either above or below the solar disk.

Next May such a transit will occur, but it will be of a very peculiar kind, one that happens only once in nearly a thousand years. In England and northern Europe, the planet will miss the sun's disk, but by such a narrow margin that in southeastern Europe and Africa it will skim along the edge, remaining there for about forty minutes. This will give time for rather detailed examination, to find whether the telescope shows a halo of light around the half of the planet's disk that is not in front of the sun.

If there is an atmosphere, such a halo should be seen. The layer of air would bend the sun's rays around as at twilight on the earth, so that the complete circle of the planet would be visible. If there were no atmosphere, however, only the part of the planet that is actually in front of the sun should appear.

During May, the moon will be visible in the evening from the beginning of the month to about the ninth, and from about May 23 to 30. Its phases are: Full moon, May 6 at 10:01 a.m., Eastern Standard Time; last quarter, May 14, at 1:12 a.m.; new moon, May 20, at 3:34 p.m., and first quarter, May 27, at 9:46 p.m. The moon is farthest from earth on May 3 at 7:00 a.m. (distance 252,300 miles), and nearest the earth on May 18 at 10:00 p.m. (distance 224,550 miles). It will be at apogee again on May 30 at 10:00 p.m. (Distance 251,700 miles).

Science News Letter, April 25, 1936

CHEMISTRY

Food Drugs and Poisons Reviewed in New Volume

COSMETICS that quite literally "put your eye out," foods that have less quality in the package than they have in high-priced magazine advertising, patent medicines "testimonialed" in the same newspapers that carried the death-notices of their recommenders, are passed in review in a new book by Ruth deForest Lamb, Chief Educational Officer of the U. S. Food and Drug Administration. (*American Chamber of Horrors*: Farrar and Rinehart.) The book is in large part the story of the struggle over the Copeland bill, due to come up for action before the adjournment of the present Congress.

This bill has been considerably modified from the form in which it originally appeared, in the days when it was dubbed the "Tugwell Bill" by its opponents, who hoped to damn it by giving it a "bad" name. Some of the provisions which have been taken out Miss Lamb regrets, notably the grading provisions for canned goods and other packaged foods. She relates case after case of misleading labeling that is still not misbranding according to the letter of the law, naming a number of highly advertised products and telling of the activities of their manufacturers and advertisers, whom she also names. Yet despite these lacks in the revised bill, Miss Lamb feels that it should be enacted, as the best that we are likely to get at the present time, and certainly as an advance over the present thirty-year-old Wiley Act.

One story told by Miss Lamb, that has not been covered at all in other recent books that tell the consumer what a sucker he often is, comprises the chapter, "How Much Poison?" It concerns the struggle over the knotty problem of spray residues on fruits. Fruit must be sprayed, at present mainly with lead arsenate, a double poison. If this is not done, the insects will get it before we do. But the poison spray sticks on, and since both arsenic and lead are cumulative poisons, piling up in the body until there is enough to cause serious illness, the spray residue must be eliminated before the fruit can be safely marketed. Efforts to introduce really effective spray residue removal, particularly in Pacific Coast orchard regions, have provoked some of the bitterest agrarian fights in recent history, rising at times to threats of murder, mayhem, and mobbing.

Science News Letter, April 25, 1936