

## ASTRONOMY

# Mercury Visible Briefly

About May 21 will be the year's best chance to view the solar system's innermost planet. Mercury is difficult to see because of its closeness to the sun.

By JAMES STOKLEY

► TO THE three planets shown on our star maps as being visible on May evenings, a fourth will be added about May 21, as Mercury moves into position to afford us the year's best view.

On that date this planet, nearest of all to the sun, will be farthest to the east of the sun. Hence it will remain visible for the longest time after sunset—a little less than two hours.

Mercury will then set at just about the time that the sky becomes quite dark so one should look for it in the twilight, perhaps half an hour after the sun has set. It will be visible as a bright star, very low in the sky, and about a quarter of the way from the western point of the horizon around to the north point.

For several days near the 21st it will thus be visible, so one might start looking for it about May 15 or 16.

Positions of other May evening planets are shown on the accompanying maps, which give the appearance of the sky at about 10:00 p.m., your own kind of standard time, on the first of May, and an hour earlier at the middle.

Brightest planet is Jupiter, to the west in Gemini, the twins, to the left of Castor and Pollux. As darkness falls, it is seen in the southwest; it sets around midnight.

## Mars in Taurus

Below Gemini Mars is shown, in Taurus, the bull, although very little of this constellation remains in view. Both its great distance from earth and its lowness in the sky combine to make Mars quite faint. Incidentally, its position is a little above that of Mercury around May 21.

These planets are all bodies like the earth, which revolve around the sun, shining by the sunlight they reflect. The stars, on the other hand, are distant suns, each shining by its own light. Brightest of those now visible in the evening is Vega, in Lyra, the lyre, seen to the northeast.

Below this is Cygnus, the swan, with Deneb, a first magnitude star that, like Mars, is dimmed by reason of its low altitude.

Several stars of the first magnitude appear in the south. One, high in the southwest, is Regulus, in Leo, the lion. Next to this group, to the left, we see Virgo, the virgin, in which Spica shines.

Next to and somewhat below Virgo is

Libra, the scales, where Saturn stands, but which contains no first magnitude stars. And next in line, lower down, we come to part of Scorpius, the scorpion, which has appeared above the horizon, with first-magnitude Antares, also fainter than it should be because it is so close to the horizon. Above the eastern end of Virgo is Bootes, the bear-driver, with brilliant Arcturus.

Near Jupiter, in the northwest, is another star of the first magnitude, Pollux, one of the twins, Gemini. A little lower, and farther right, is Auriga, the charioteer, with Capella.

High in the north is the Great Dipper, part of Ursa Major, the larger bear, one of the circumpolar constellations which, in our latitudes, never set below the horizon. Draco, the dragon, Cepheus, the king, and Cassiopeia, the queen, as well as Ursa Minor, the smaller bear, with the pole star, are all circumpolar.

## Five Visible Planets

We have mentioned four planets, but there are five which are visible to the naked eye. The fifth is Venus, now a morning star, shining brilliantly low in the east just before the sun rises.

Of all these naked eye planets, the hardest to see is Mercury, on account of its closeness to the sun. Its average distance from that body is 36,000,000 miles compared with 93,000,000 for the earth.

As it revolves about the sun once every 88 days, we see it sometimes to the east of the sun and sometimes to the west. Its angular distance, in the vault of the sky, may at such times be as much as 28 degrees, which is a little less than a third of the way from the horizon to the zenith. Gen-

erally it is less. The greatest elongation to the east that Mercury reaches this month (on May 21) is somewhat over 22 degrees.

Each day the earth turns once on its axis, from west to east, and this makes the sun, as well as other heavenly bodies, seem to move across our sky from east to west. Thus, when Mercury is at its greatest eastern elongation, as it is in May, it follows the sun across the sky and remains visible in the west after sunset. Since, at the most, it cannot be more than 28 degrees away from the sun, it can never stay in the sky very long after sunset, never long enough to remain visible when dusk is over and the sky is dark.

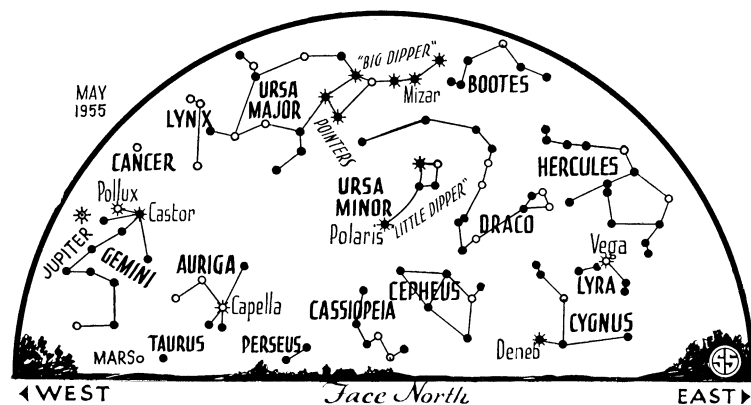
After this greatest eastern elongation, Mercury swings between the sun and earth and is no longer visible. But when it passes to the west of the sun, and reaches greatest western elongation, as it will in July, it precedes the sun in the daily procession across the sky, rising in the east before sunrise.

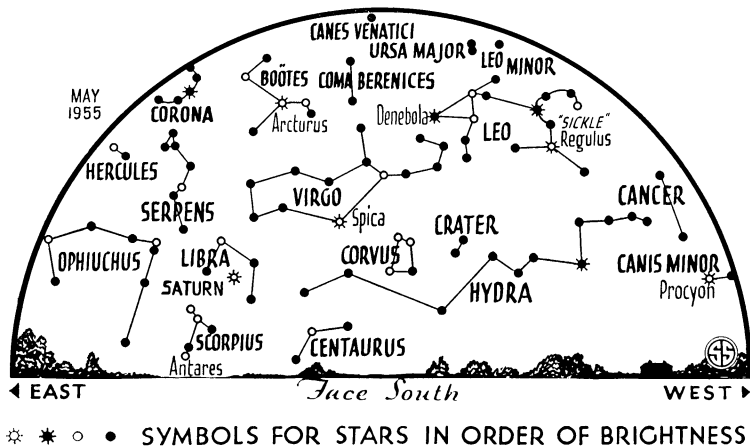
## Mercury Above Sun

However, this is not the whole story of the factors that makes it easily visible. At a greatest eastern elongation in the spring, like the one this May, Mercury is nearly above the sun. Its separation from that body is most effective in delaying its setting after sunset.

At a fall elongation, on the other hand, it may be the same distance away from the sun but is toward the south instead of above, and it sets very soon after sunset. Thus a spring eastern elongation affords the best time to see Mercury in the evening and, conversely, a western elongation in the autumn is best for morning viewing.

Saturn, at an average distance of 886,000,000 miles, is the farthest of the naked eye planets. Next is Uranus, 1,783,000,000 miles out, which was discovered by Sir William Herschel in 1781. It is sixth magnitude, just about the faintest that can be





seen with the naked eye under the most favorable conditions, but these do not prevail around a large city. However, even there, on a clear night it should be possible to see Uranus with a pair of binoculars, or even opera glasses, if one knows where to look.

In May we are provided with a convenient guide with which to find Uranus, namely Jupiter, which passes its brother planet on the afternoon of May 10 at 4:00 p.m. EST.

When closest, Uranus is only one minute of arc to the north, a distance only a thirtieth of the apparent diameter of the moon. By that evening, of course, they will have moved apart a little, but will still be close. So take a pair of opera glasses on the evening of May 10 and look at Jupiter, the brightest star or planet in the sky. The much fainter body nearby will be Uranus.

**Celestial Time Table for May**

May	EST	
4	early a.m.	Meteors visible radiating from constellation of Aquarius.
6	5:14 p.m.	Full moon.
7	1:22 a.m.	Moon passes Saturn.
8	7:00 p.m.	Moon farthest, distance 252,300 miles.
9	1:00 a.m.	Saturn nearest, distance 825,900,000 miles.
10	4:00 p.m.	Jupiter passes Uranus.
14	8:42 p.m.	Moon in last quarter.
19	8:43 p.m.	Moon passes Venus.
21	3:58 p.m.	New moon.
	5:00 p.m.	Mercury farthest east of sun.
	11:00 p.m.	Moon nearest, distance 220,100 miles.
23	5:26 a.m.	Moon passes Mercury.
	1:07 p.m.	Moon passes Venus.
25	12:16 p.m.	Moon passes Jupiter.
28	9:01 a.m.	Moon in first quarter.

Subtract one hour for CST, two hours for MST, and three for PST.

Science News Letter, April 23, 1955

CHEMISTRY

**Material Resistant to Acid**

➤ AN IVORY-LIKE substance similar to graphite in resistance to acids was announced as a new material with unusual properties at the meeting of the American Chemical Society in Cincinnati, Ohio.

Chemically it is boron nitride. Besides being white instead of black, boron nitride differs also from graphite in its high electrical resistivity. Its structural strength is greater than that of graphite at low temperatures, although it is somewhat weaker at high temperatures.

It can be heated to 700 degrees centigrade, nearly 1,300 degrees Fahrenheit, without burning, and oxidizes only slowly from there up to 1,800 degrees Fahrenheit. It is resistant to corrosive chemicals.

Boron nitride was prepared by the Carborundum Co., Niagara Falls, N. Y., and was described to the meeting by Dr. K. M. Taylor of Carborundum's research and development division.

Other refractory materials described to the meeting as suitable for use at high temperatures or for handling corrosive

liquids were listed as fused oxides of aluminum, calcium, magnesium, thorium and zirconium. Data on how to use them were given by Dr. O. J. Whittemore Jr., of the Norton Co., Worcester, Mass. Carbides of silicon, titanium and zirconium, and borides of carbon, titanium and zirconium were also listed by him as available for similar uses.

Silicon carbide, long known as an abrasive, can be bonded with silicon nitride to form tools and machine parts of intricate shape from acid-spray nozzles, burner tips for acid sludge, immersed thermocouples in corrosive melts, pumps for abrasive slurries, and agitating blades operating under difficult conditions, the meeting was told by Dr. Frank C. Roe of the Carborundum Co., Perth Amboy, N. J.

Science News Letter, April 23, 1955

The *clavicula*, or collar bone, can be dispensed with without any significant impairment of body function, a group of physicians report.

PSYCHOLOGY

**Tactile Sense Loss in Brain-Injured Veterans**

➤ VETERANS SUFFERING from a penetrating injury in the brain lose their ability to learn a pattern through the sense of touch.

Experiments with 53 men with such injuries were reported to the Eastern Psychological Association in Philadelphia. Each patient reached under a curtain into a box. There a metal pattern mounted on a wood block was placed in his palm. Then he was required to choose from among six other patterns the one that felt like the sample.

He was given three trials and any improvement in matching up the patterns was noted.

Those with an injury on one side of the brain did not improve with repeated trials with the opposite hand—that controlled by the injured side of the brain.

Men injured on both sides of the brain showed no improvement with either hand.

A comparison group of veterans with no brain injury but only leg wounds showed learning with both hands.

The loss of touch learning ability showed up in the brain injured group whether or not they had suffered any noticeable sensorimotor defect.

The study was reported by Drs. Lila Ghent, S. Weinstein, Josephine Semmes and H. L. Teuber, of the New York University College of Medicine.

Science News Letter, April 23, 1955

Milk has a higher percentage of solids than carrots, beets, onions or tomatoes.

## CLEAN CAR?

Wipe it off every nice day with a \$2 KozaK Auto Dry Wash Cloth and you'll NEVER have to hose it. KOZAK will even DRY wash a nice car that is so dirty you can hardly tell the color of the paint. Been doing it for 29 years now. For people whose cars are ALWAYS clean, this \$2 investment will return you fifty in car wash savings. And has been so Guaranteed to 10 million buyers since 1926. Mail coupon to:

**THE ORIGINAL**

# KOZAK

**Auto Dry Wash**

119 S. Lyon St. Batavia, N. Y.

---

© KOZAK, 119 S. Lyon St., Batavia, N. Y. Please send me POSTPAID:

<b>Super \$3 KozaKs</b> Last 4 Times Longer <input type="checkbox"/> 1 for \$3	<b>Reg. \$2 KozaKs</b> Millions Use Them <input type="checkbox"/> 1 for \$2
--	---

---

**Special Introductory Offer**

2 Reg. KozaKs Plus 1 Super (Value \$7)

All for \$5

Cash       Check Enclosed