

ASTRONOMY

Planets Rise Late

The first to arise, Mars, appears around midnight. Saturn appears in the east about 1:00 a.m. Venus comes up about three hours before sunrise, Mercury at dawn.

By JAMES STOKLEY

► TO SEE a planet during the month of September, moderately late hours will be required. The first to arise, Mars, appears in the northeast around midnight, after which it will be seen for the rest of the night. Red in color, and equal to a first magnitude star, it will not be difficult to find.

Because of its late rising, it does not manage to get on the accompanying maps, which show the appearance of the sky at about 11:00 p.m., your own kind of war time, on Sept. 1 and about 10:00 p.m. at the middle of the month. They can, however, be used earlier in the evening without difficulty. Simply remember that the stars, like the sun, move across the sky from east to west. Therefore, a little earlier than the times given, the whole group of stars indicated will be shifted a little to the east. Stars shown on the maps as low in the east may not then have arisen, while others that are not shown will still be on view in the west. Those high in the south will look pretty much the same.

The brightest of the stars to be seen these evenings is Vega, high in the west in the figure of Lyra, the lyre. Directly overhead is the Northern Cross, otherwise known as Cygnus, the swan, with bright Deneb at the top of the cross, toward the north. Below Cygnus, to the south, is Aquila, the eagle, with Altair, another star of the first magnitude.

Three Others Indicated

Three other first magnitude stars are indicated on the maps. As they are all near the horizon, they look fainter than they do when higher, on account of the absorption by the greater length of the earth's atmosphere through which their light has to pass. Low in the south is Fomalhaut, in Piscis Austrinus, the southern fish. In the west we see Arcturus, in Bootes, the bear-driver, while coming up in the northeast is Capella, in Auriga, the charioteer.

Though not of the first magnitude, another easily recognized stellar figure now in a good position is the Great Square in Pegasus, the winged horse, seen high

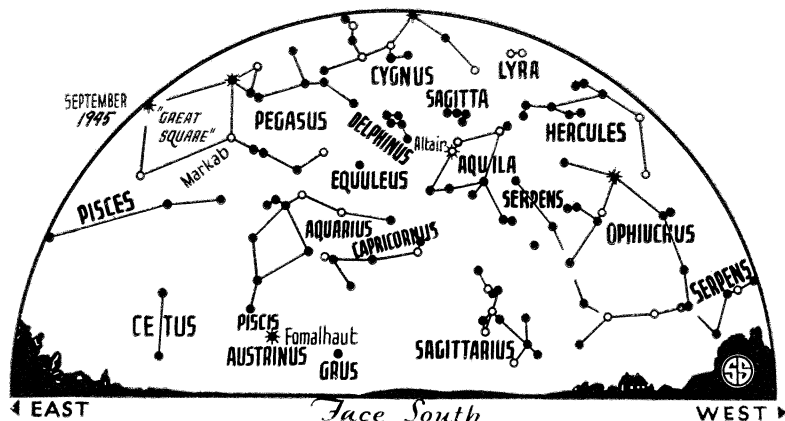
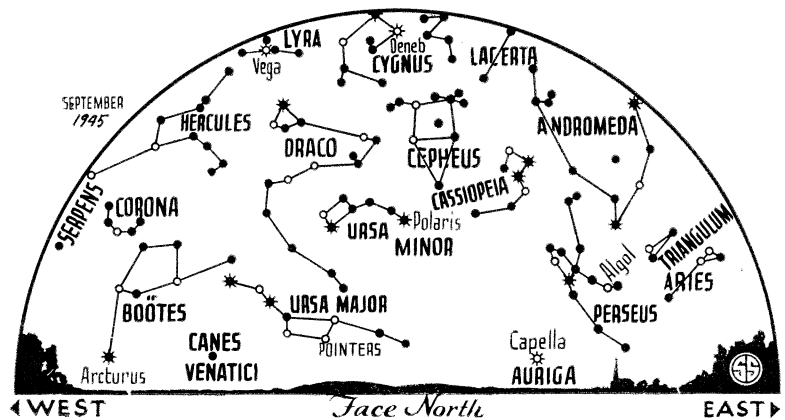
in the east. Just below Lyra, in the west, is Hercules, the strong man, some of the stars of which form a letter H, while others see it as a butterfly. Directly under Cygnus, to the south, is the little figure of Delphinus, the dolphin, sometimes known as Job's coffin. And near it, to the right, just over Altair, is another of the smallest constellations, Sagitta, the arrow, a group which has no known connection with Sagittarius, the archer, low in the south.

In the north the Great Dipper is nearly at its lowest position of the year. Directly above it is the winding line of stars that make up Draco, the dragon, twisting themselves around the Little Dipper, which has the pole star at the end of its handle. To the right of the pole star is Cassiopeia, the queen, shaped like a

W tilted to the left. And between Cassiopeia and Ursa Minor, of which the Little Dipper is part, is Cepheus, the king.

After Mars, the next planet to appear these September nights is Saturn, which is in the group of Gemini, the twins, appearing in the east about 1:00 a.m. Of magnitude 0.4, it is appreciably brighter than Mars. Venus, brightest of all, with magnitude minus 3.4, comes up in the east about three hours before sunrise, in Leo, the lion. About Sept. 6 Mercury, then of zero magnitude, reaches its greatest distance west of the sun when at sunrise it is about 16 degrees above the horizon. This means that around this date you may be able to get a glimpse of it, low in the east, as dawn is breaking.

Besides being the brightest star now seen, Vega has other points of interest. For one thing, it will be the pole star about 14,000 A.D., as it was around 12,000 B.C. This is an effect of the movement known as precession (sometimes



◊ * ◦ • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

misprinted procession) of the equinoxes, a slow wabbling movement of the earth's axis by which in the course of nearly 26,000 years it traces out a large circle in the sky, bringing various stars into the position of the pole star.

In Lyra several interesting objects are revealed by the telescope. With Vega there are two fainter stars which form a little equilateral triangle. The most northerly one is epsilon Lyrae, sometimes called the "double double." To a very keen eye what seems at first a single star appears as two, while the telescope shows that each member of the pair is itself double. In Lyra also is the famous Ring nebula, a globe of glowing gas which looks, through the telescope, like a smoke ring in the sky. It cannot be seen at all with the naked eye.

Also close to Vega, just across the border in the next-door constellation of Hercules, is the place where we are going. That is, the entire solar system—sun, planets, and all—are moving through space toward this part of the sky at a speed of 12.2 miles per second. The result of this, incidentally, is that the movement of the earth is in a helix, or corkscrew, and not in a plane circle. This is a fact that has been well-known to astronomers for years, and is fully described in many textbooks, although once in a while some uninformed person suddenly finds it out and thinks he has made a great discovery!

To the south is the figure of Sagittarius, the archer, which has some points of interest, because it is the direction of the center of our celestial city—the Milky Way, or galaxy. All the stars that we see, and a vast number that are only revealed

by the telescope, form a system that has the shape of a bun, or rather thick watch, so large that light takes about 100,000 years to cross it. This, even though the speed of light is 186,000 miles every second. The center, toward Sagittarius, is about 30,000 light years away.

The glowing path of light that we call the Milky Way is simply the edge of the galaxy, for when we look toward it we see more stars than when we look to the sides. But vast though this galaxy is, it is only one of many such systems in the sky, which again makes us realize the minute part of creation that is occupied by man and his works.

Celestial Time Table for September

Sept.	EWT	
2	6:57 a.m.	Moon passes Saturn
3	6:41 a.m.	Moon passes Venus
4	5:49 p.m.	Moon passes Mercury
6	8:00 a.m.	Mercury farthest west of sun
	9:43 a.m.	New moon
7	8:04 p.m.	Moon passes Jupiter
10	8:00 p.m.	Moon farthest, distance 252,000 miles
14	1:38 p.m.	Moon in first quarter
21	4:46 p.m.	Full moon
22	midnight	Moon nearest, distance 223,500 miles
23	5:50 a.m.	Sun crosses equator, autumn commences
28	7:24 a.m.	Moon in last quarter
	7:39 p.m.	Moon passes Mars
29	4:26 p.m.	Moon passes Saturn
30	7:00 p.m.	Moon passes Mercury

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

Science News Letter, September 1, 1945

MEDICINE

Sailors and Marines Used Cold Cream and Lipstick

➤ **HARDBOILED** sailors on our fighting ships used cold cream, and Marines on sun-scorched Pacific isles carried lipsticks. These now-it-can-be-told secrets

came out in the course of a radio address by Rear Adm. Harold W. Smith, chief of the research division in the Navy's Bureau of Medicine and Surgery.

However, the cold cream was anything but a boudoir luxury. It was a specially developed protection against the painful type of injury known as flash burn, which our men risked whenever they went into action stripped to the waist.

Similarly, the lipstick wasn't an item you'd be likely to find in any lady's handbag. Its color is a most unglamorous gray-brown—but it is an effective preventive of the painful sunburn that afflicts men's mouths and noses where the sun pours on an excess of "hot" ultraviolet rays.

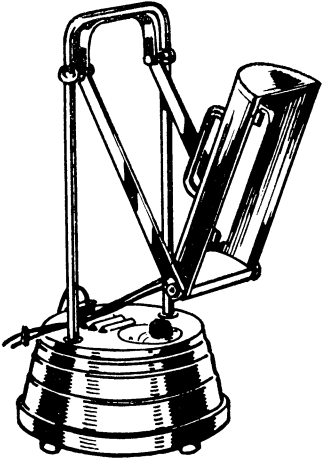
These, of course, are relatively minor products of naval medical research, Admiral Smith explained. As examples of larger undertakings that saved many lives under strenuous field conditions he cited the whole prepared blood program, the anti-G suits that kept flyers from "black-ing out" at the bottom of a high-speed dive, and the emergency kits with which all life rafts are now equipped.

Admiral Smith spoke as guest of Science Service on the CBS public service feature "Adventures in Science."

Science News Letter, September 1, 1945

Tomatoes, pole beans, cucumbers and squash can be trained to the garden fence.

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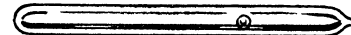
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