

ASTRONOMY

Five Planets in Evening Skies

Jupiter is very bright in October, but Venus is more than five times brighter. Saturn's rings and belts make an impressive display through a telescope, James Stokley reports.

► ALL of the five planets that ever become visible to the naked eye are in the evening sky during October, but they will not be equally easy to see. However, the accompanying maps will help you to locate two of them, at least.

These maps show the way the sky looks about 10 p.m., your own kind of standard time (add one hour for daylight saving time) at the first of October, an hour earlier at the middle and two hours earlier at the end of the month.

Early in the evening, soon after it gets dark, you will see a very bright object in the south, which is the planet Jupiter. It is in the constellation Sagittarius, the archer, and the planet is much brighter than any of the nearby stars. By the times for which the maps are drawn, it is near the horizon, about ready to set, and its light is considerably diminished.

A little to the left (east) and also in Sagittarius, you will find Saturn, another planet, which is less than an eighth as bright as Jupiter, although it still equals most of the bright stars.

Mars which is about 75% brighter than Saturn, rises in the northeast about 10 p.m. at the beginning of October, 9 p.m. at the end, so it does not quite get on the maps. However, it is in the constellation of Gemini, the twins, which is just below that of Taurus, the bull, a figure that is shown near the eastern horizon (on the map of the northern sky).

Venus Sets Before Twilight

Early in the evening Venus is visible low in the southwest, but it sets before twilight is entirely over so you only see it in the gathering dusk. It is about 5.25 times as bright as Jupiter so it shines brilliantly, even while there is still considerable glow in the sky.

The fifth and last of the naked-eye planets is Mercury, the nearest of all to the sun. For that reason it never gets very far away from the sun in the sky. On Oct. 15, it will be farthest east of the sun, and will remain a little above the horizon after sunset. It will be so low, however, that it will not be easy to locate. But if, about the middle of the month, you look toward the western horizon soon after sunset, see brilliant Venus and another and fainter object a little lower and to the right, the latter would be Mercury.

The brightest star in October is Vega, high in the west in the constellation of Lyra, the lyre. Second is Capella, in Auriga, the charioteer, in the northeast. Then comes Altair, toward the southwest, in Aquila, the eagle, a little to the left of Lyra. And above

Lyra (shown partly on the northern map and partly on the southern) is Cygnus, the swan, with the bright star called Deneb.

Low in the east Taurus is coming into view, with Aldebaran. This star, like the others mentioned, is of the first magnitude but its low altitude makes it appear fainter than it does when higher in the sky. This is true also of Fomalhaut, in Piscis Austrinus, the southern fish, which is low in the south.

Pegasus Rides the South

Higher in the south is Pegasus, the winged horse. It contains no first-magnitude stars, but it is a prominent constellation, mainly because of the four stars which form the "great square." If you know this, it is a help in locating other star groups. Actually only three of this stellar quartet are in Pegasus. Alpheratz, the one in the upper left-hand corner of the square, is in the neighboring constellation of Andromeda.

Many observatories over the country have regular nights on which they are open to the public, and now one of the most interesting things they have to show is the planet Saturn. The source of this interest

is the unique system of rings that surrounds the ball of the planet, which is some 75,000 miles in diameter. It is about 886,000,000 miles from the sun, and goes around it once in 29.5 of our years.

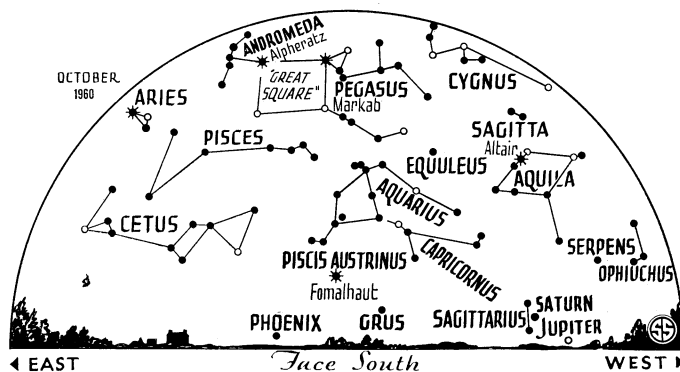
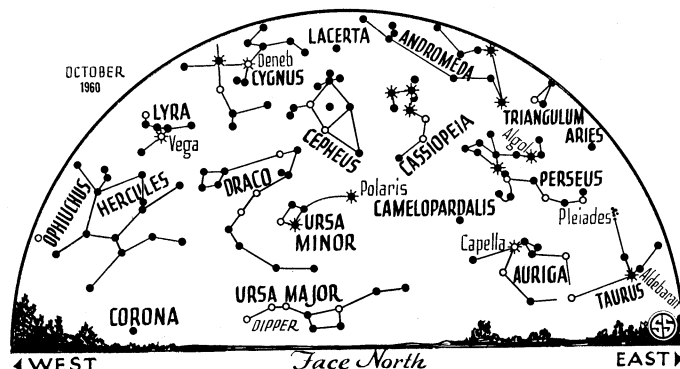
Through a telescope you can see belts on the planet. Similar belts—even more prominent—appear on Jupiter. Saturn has nine satellites or moons. The largest, appropriately called Titan, is 3,500 miles in diameter, larger than any other satellite. Moreover, it is the only moon on which an atmosphere has been detected.

But the really striking feature of Saturn is the beautiful system of rings. This is not a solid structure, as nothing solid would hold together under the enormous strains that would develop.

Instead, the system is really a swarm of tiny moons—some perhaps as large as golf balls, others no larger than grains of sand or dust particles. These are so close together that from our distance, which ranges from 746 million to more than a thousand million miles, we cannot see the individual satellites, and they merge together into continuous rings.

Squeeze Earth Through—Almost

The outside diameter of the ring system is 171,000 miles. With a total width of 41,500 miles there is a space of 7,000 miles between the innermost ring and the planet's surface, almost enough to let the earth squeeze through without touching.



☉ * * • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

Celestial Time Table for October

Oct.	EST	
3	8:34 p.m.	Algol (variable star in Perseus) at minimum brightness
4	5:17 a.m.	Full moon (Harvest moon)
11	5:00 a.m.	Moon passes Mars
12	8:00 a.m.	Moon farthest, distance 251,200 miles
	12:26 p.m.	Moon in last quarter
15	5:00 p.m.	Mercury farthest east of sun
	7:49 a.m.	Algol at minimum
18	4:37 a.m.	Algol at minimum
20	7:03 a.m.	New moon
21	1:26 a.m.	Algol at minimum
23	10:15 p.m.	Algol at minimum
24	3:00 p.m.	Moon nearest, distance 229,000 miles
	5:00 p.m.	Moon passes Jupiter
25	4:00 p.m.	Moon passes Saturn
26	7:04 p.m.	Algol at minimum
27	2:34 a.m.	Moon in first quarter

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

• Science News Letter, 78:202 September 24, 1960

PHYSIOLOGY

Rare Blood Group Found in Australia

➤ A RARE new blood group factor has been discovered in Australia. It was found after an analysis of more than 2,000 blood samples, following discovery that the blood of members of two Brisbane families and a Red Cross blood donor were incompatible.

The Queensland Red Cross blood bank director, Dr. A. E. Shaw, said this was the second time such a discovery had been made. The first rare blood group called "Graydon," was originally found among members of a Melbourne family many years ago. The second blood group has not been named.

"The discoveries are the result of patient investigation over several years," Dr. Shaw said. "They will make the techniques of blood transfusion safer."

The American National Red Cross director of research, Dr. James H. Pert, said the new factor was unknown in the United States as far as he knew.

• Science News Letter, 78:203 September 24, 1960

Do You Know

If the eye has no other disease, over 90% of the patients undergoing cataract surgery will have their vision restored; when other diseases are present, at least two-thirds will regain sight.

A high-powered hydrogen gun, capable of shooting projectiles at a speed 20 times as fast as a .45 caliber bullet, is one of the weapons that scientists will use in their assault on outer space.

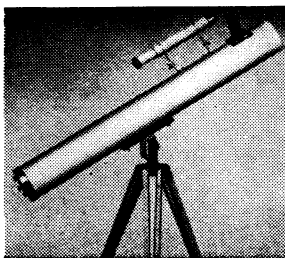
In the United States and Canada, more than 2,000,000 fires of all sizes, during 1959, destroyed close to \$1,400,000,000 worth of property.

The Great Wall of China took centuries to build and, when finished, stood 20 to 30 feet high, averaged 25 feet in thickness at the base, and was 1,400 miles long—equal to halfway across the United States.

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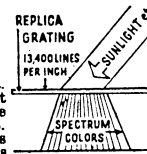
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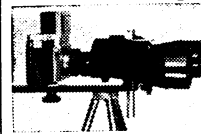
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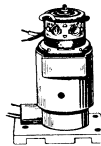
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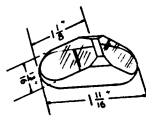
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