

ASTRONOMY

Bright Jupiter Seen in October

Jupiter and Saturn are still visible in October skies during the evening. The moon can be observed during the second half of the month, James Stokley reports.

Cygnus you can find Pegasus, the winged horse of the old myth. This is a rather conspicuous group, even though the brightest stars in it are of the second magnitude.

The map shows the location of the "Great Square" in Pegasus, an easily located figure

► WITH THE COMING of the month of October, the planets Jupiter and Saturn are still visible in the evening sky. Jupiter is brighter than any star or other planet that can now be seen.

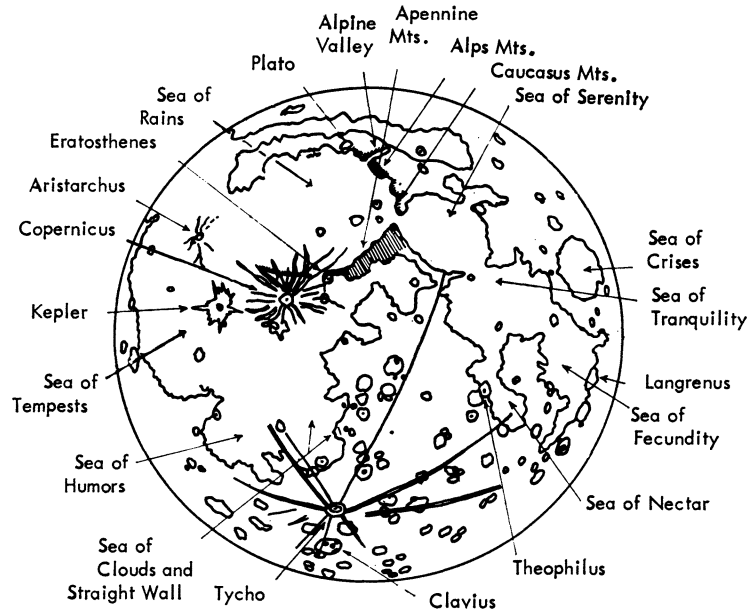
Both planets are shown on the accompanying maps, which depict the heavens as they look about ten p.m. your own kind of standard time (add one hour for daylight saving time) on Oct. 1, nine p.m. on the 15th and eight p.m. on the 31st.

Saturn is a little to the right of Jupiter, nearer the horizon, and about a twelfth as bright. However, it still ranks with the stars of the first magnitude. These two planets remain on view until about midnight.

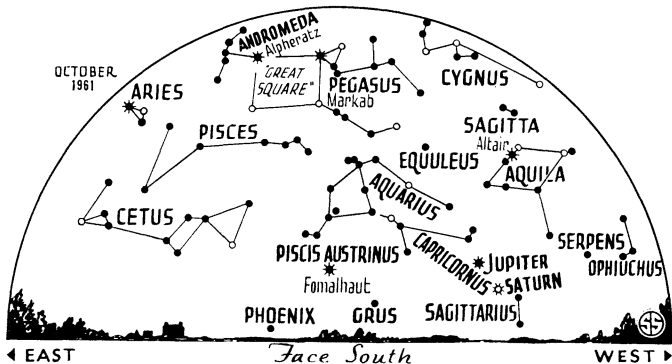
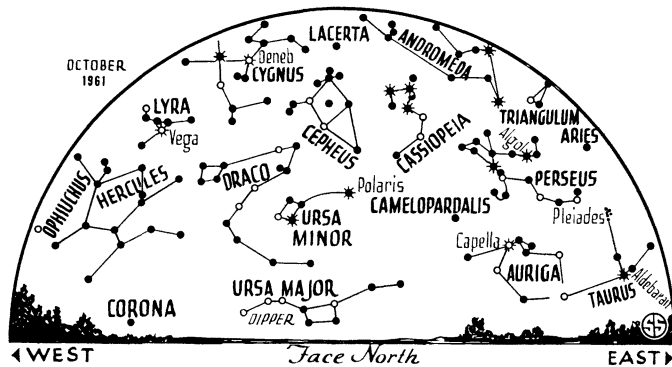
As for the stars themselves, the brightest now on view is Vega, in the constellation of Lyra, the lyre, high in the west (shown on the map of the northern half of the sky). Still higher is Cygnus, the swan, with a bright, first magnitude star named Deneb. Cygnus is divided on our maps, with part on the northern one and part on the southern. And between the lower part of Cygnus and the two planets lies Aquila, the eagle. This contains another star of the first magnitude, called Altair.

On the southern map, just to the east of

MAP OF THE MOON



NORTH APPEARS AT THE TOP



* * * • SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

that helps you to find other groups around it. Actually, only three of the stars that make up the square are in Pegasus. The one in the upper left, named Alpheratz, is in Andromeda. This, in mythology, represented the princess that was left chained to the rock, to be devoured by a sea monster. Since she was rescued by the hero Perseus, who was riding on Pegasus, her proximity to the winged horse is appropriate.

Perseus, too, is in the sky, for this constellation is in the northeast. Here is the interesting star Algol. A famous variable, Algol fades from its normal brightness of magnitude two to the third magnitude every 2 days, 20 hours, 48 minutes. It is really two stars, one much fainter than the other and revolving around it. The dimming occurs as the faint one partially eclipses its more brilliant companion.

To the west of Perseus stands Cassiopeia, the queen, and Cepheus, the king, who were Andromeda's parents. All the principal characters in the mythological story are depicted in the sky—even the sea monster. He is represented by the constellation of Cetus, low in the southeast.

Three other first-magnitude stars are now visible. In the northeast, below Perseus, is Auriga, the charioteer, with the star Capella. And farther right is Aldebaran, in Taurus, the bull. This star is considerably dimmed because of its low altitude. However, it rises considerably higher in the South, and becomes brighter, later in the

night. And low in the south is Fomalhaut, in Piscis Austrinus, the southern fish. This star is now about as high as it ever gets, for latitude 40 degrees.

In addition to Jupiter and Saturn there are three other planets sometimes visible to the naked eye. Two of these, Mercury and Mars, are now too nearly in the same direction as the sun to be seen. But the third, Venus, rises in the east about two hours before the sun. Its brightness is about 3.6 times that of Jupiter, so it is very easy to find. In fact, it remains visible well into the dawn, long after other stars have faded.

The moon during October will be most prominent in the evening from about the 12th to the 26th. On Oct. 9, when it is new, it is in the same direction as the sun, and we cannot see it. But a few days later it will have moved far enough to the east that it remains visible in the sky after the sun has set. Moreover, little of the lunar hemisphere on which the sunlight is shining will be turned toward us, and so it will appear as a crescent in the west in the early evening.

On the 16th it will be at first quarter, with half of the illuminated hemisphere visible. Then it is in the south at sunset, and it sets about midnight. On Oct. 23 it will be full. Then it is opposite the sun, so it rises at sunset and sets at sunrise. The entire bright half is visible. After that it continues to rise later and later, so it is soon gone from the evening sky. It reaches last quarter on the last day of October, when it does not rise until midnight.

If you have a good pair of binoculars, or even of opera glasses, try using them to watch the moon, night after night, as it goes through its phases.

The moon is not smooth, but has many mountain ranges and craters scattered around its surface, some of which can be seen with such simple optical aid. And then there are the dark areas, visible to the naked eye, which form the familiar face of the "man in the moon." These are called "seas," even though there is no water on our natural satellite. The early lunar observers thought they were bodies of water and so named them. Some of their designations, still used, are quite fanciful—Sea of Tranquility, Sea of Serenity, etc.

The craters, which probably were formed by the impact of huge meteorites that exploded as they hit, are named after famous astronomers and other scientists. One of the largest, about 140 miles in diameter, is called Clavius, after the astronomer who assisted Pope Gregory XIII when he introduced our present calendar in 1582.

The principal seas, as well as some of the most prominent craters, are indicated on the accompanying lunar map, but all of these features cannot be seen at any one time. When the moon is full the craters are nearly invisible, but the seas are conspicuous. Around first quarter is the best time to see the craters. Then, for those near the middle of the lunar disc, the sun is shining at a low angle, and there are many shadows which bring them into relief.

So try your binoculars on the moon. Probably you will be surprised at what you can see.

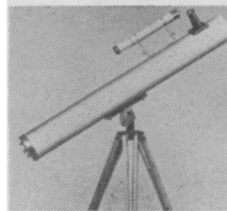
(continued on p. 215)

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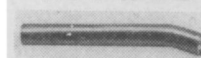
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Bright Jupiter Seen

(continued from p. 211)

Celestial Time Table for October

Oct.	EST	
1	9:10 a.m.	Moon in last quarter
3	12:08 a.m.	Algol (variable star in Perseus) at minimum
5	3:00 a.m.	Moon farthest, distance 251,900 miles
	8:56 p.m.	Algol at minimum
7	3:00 a.m.	Moon passes Venus
8	5:45 p.m.	Algol at minimum
9	1:53 p.m.	New moon
16	11:35 p.m.	Moon in first quarter
	midnight	Moon passes Saturn
17	9:00 a.m.	Moon passes Jupiter
21	2:00 a.m.	Moon nearest, distance 226,600 miles
22	2:00 p.m.	Mercury between earth and sun
23	4:31 p.m.	Full moon
25	10:37 p.m.	Algol at minimum
28	7:26 p.m.	Algol at minimum
31	3:59 a.m.	Moon in last quarter

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

Know the Sky

These star maps showing the positions of stars and planets can help you locate satellites when they flash briefly across the sky. Familiarity with the constellations and their relative positions makes locating artificial moons much easier whenever they are visible from your area.

• Science News Letter, 80:210 September 23, 1961

ASTRONOMY

New Faint Comet Found In Constellation Pisces

➤ A FAINT COMET has been discovered in the constellation Pisces, or the fishes.

The comet, first seen on Sept. 1 by Dr. M. L. Humason of Mt. Wilson and Mt. Palomar Observatories, was reported to be of 16th magnitude and can only be viewed through large telescopes.

The comet was reported to Harvard College Observatory, Cambridge, Mass., clearing house for astronomical information in the Western Hemisphere.

• Science News Letter, 80:215 September 23, 1961

Questions

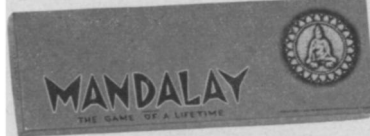
AERONAUTICS—What is the estimated cost of a 2,000-mile-per-hour Mach 3 plane? p. 205.

SPACE—How many men are future U. S. space ships expected to carry? p. 203.

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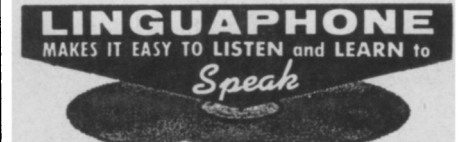
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