

ASTRONOMY

Venus, Jupiter and Saturn Shine

During June, Venus shines brilliantly in the west during twilight. Two other planets, Jupiter and Saturn, appear in the east later in the evening, James Stokley reports.

► WITH THE COMING of June, the planet Venus shines brilliantly in the west as the sky darkens, while two others—Jupiter and Saturn—appear in the east later in the evening. These all join the stars of the early summer sky. For it soon will be summer; the season begins officially in the Northern Hemisphere on June 21.

The accompanying maps show the evening skies as they appear about 10 p.m., your own kind of standard time, at the beginning of June; an hour earlier in the middle of the month and at 8 p.m. June 30. (Add one hour for daylight saving time.) At that hour and date, of course, it will be so soon after sunset that the sky will still be quite bright. You will not be able to see the stars, but Venus will be distinctly visible.

Venus Moving Rapidly

Venus is now moving rapidly through the sky so its positions both early in the month and at the end are shown. Actually, on June 1, it will have set by 10 p.m., the time for which the map is prepared. We have shown its June 10 position, however: in the constellation of Gemini, the twins, near the bright star Pollux. Soon after this Venus moves into the faint constellation of Cancer the crab (for which no stars are shown), then it approaches Leo, the lion. On June 30 it will be close to the sickle, a group of stars in Leo shaped like that implement.

Venus and part of the sickle are shown on our map of the northern sky, but most of Leo is on the one for the southern part. This includes Regulus, the brightest star in the constellation, which marks the end of the sickle's handle. Higher and farther south is Denebola, which marks the end of the lion's tail, as the figure was depicted on old star maps.

To the left of Leo is Virgo, the virgin, with Spica, a star of the first magnitude. Above it, in Bootes, the herdsman, is Arcturus, even more brilliant. A good way to locate this star, by the way, is to look first to the north and find the big dipper. This is part of Ursa Major, the great bear. At the bottom of the dipper, as it now stands, are the pointers. A line through them, followed to the right, brings you to Polaris, the pole star, in Ursa Minor, the little bear. But if you continue the curve of the big dipper's handle, through the stars Alioth, Mizar and Alkaid, you will come right to Arcturus. And if the curve is followed still farther, it brings you to Spica.

To the left of Spica is Libra, the scales, a group that does not boast a first magni-

tude star. But to the left of Libra is part of Scorpius, the scorpion, with Antares, a brilliant red star. The rest of this constellation, with a curved row of stars representing the animal's tail, comes up a little later.

High in the east stands Vega, in Lyra, the lyre. This is the brightest of the stars now visible, although it is about a twenty-fifth as bright as Venus—and about a seventh of the brilliance of Jupiter. Beneath Lyra lies Cygnus, the swan, part of which forms the northern cross. It is now seen partly inverted for Deneb, to the left, is at the top of the cross.

To the right of Cygnus (shown on the southern sky map), is Aquila, the eagle, and in this group stands the star called Altair. You may notice, by the way, that this star is shown by the second magnitude symbol, although it is actually of the first. The same is true for Antares, Regulus, Deneb and Pollux.

Being so low in the sky at this time, the light of these stars is greatly attenuated by the long path it has to travel through the earth's atmosphere; when seen higher in the sky, they shine more brightly. Capella, in Auriga, the charioteer, shown low in the north, is so near the horizon that it is as faint as the third

magnitude, although it is really of the first.

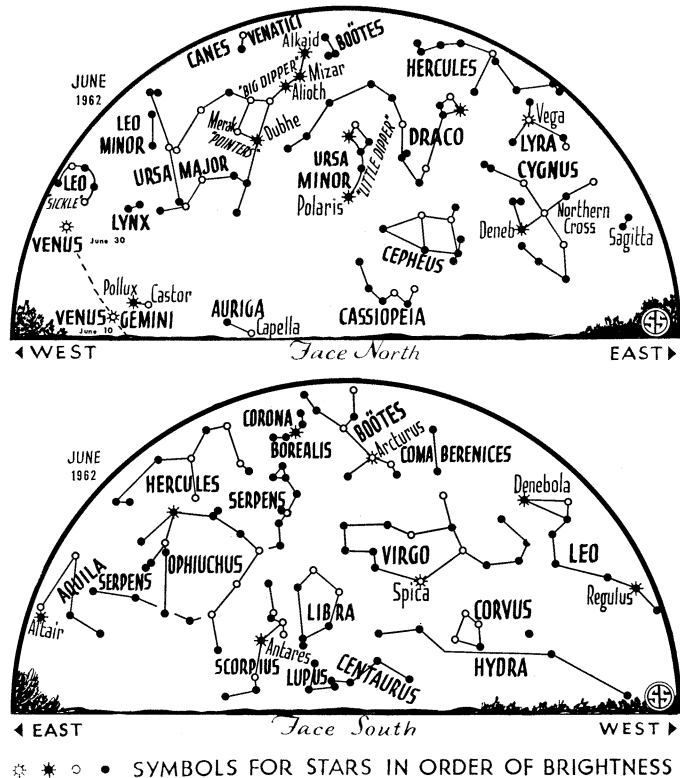
Later in the evening—around 10:30 at the first of June, and 8:30 on the 30th—Saturn rises in the east. Jupiter follows a little more than an hour later. Mars rises about two hours before sunrise. Mercury is not visible this month.

Over in the southeastern sky these evenings you can see a constellation that is unique because it is divided into two parts: Serpens, the serpent. Serpens Caput (i.e., "head of the serpent") is high toward the south, while the tail (Serpens Cauda) is lower and farther east, right next to Aquila. Between them stands Ophiuchus, which ranks eleventh in sky area among the 88 constellations. However, if Ophiuchus and Serpens are counted as one—as they were in ancient times—it is the largest of all. At present the largest is another snake, Hydra, which is not visible on June evenings.

On the old star maps, which pictured the imaginary figures around the stars, Ophiuchus was shown as a man holding a huge serpent. Sometimes it is called Serpentarius, the Latin equivalent of Ophiuchus, which is derived from the Greek and means "serpent bearer."

The constellation is an old one; it has been traced back as far as 1200 B.C. In Greek mythology it represented Aesculapius, the son of Apollo and the first physician. So skillful was he that he was even able to restore the dead to life.

This alarmed Pluto, the god of the



underworld, who was afraid that he would have no business if Aesculapius continued his healing art. So Zeus removed him from earth and placed him in the sky. He was worshipped as the god of medicine, and serpents have always been associated with him. The staff of Aesculapius, a stick with a snake entwined around it, is still a medical symbol, and the insignia of the U.S. Army Medical Corps.

Stars of Ophiuchus

At present Ophiuchus contains no star as bright as the first magnitude, but in the year 1604 there flashed out within its borders one that for a time rivaled Venus in brilliance. The great German astronomer Johann Kepler observed it extensively and wrote about it. Its location is a little below the point where the serpent's tail joins Ophiuchus.

This was a fine example of a supernova—a star that, for some reason not fully understood, suddenly explodes. One may, for a while, become as much as a hundred million times brighter than the sun (in actual luminosity, or candlepower). Kepler's supernova was the last to appear in our Milky Way system—the galaxy—but many have been observed since in other galaxies, far beyond the limits of ours.

Astronomers estimate that one supernova will appear in a galaxy on the average of once in about 500 years. However, that of 1604 followed by only 32 years one that was observed in 1572. The last previous to that was in Taurus in the year 1054. There are Chinese records of its appearance, and its location is marked now by a cloud of glowing gases called the Crab nebula. Nothing remains visible of the supernovae of 1572 and 1604.

Celestial Time Table for June

June EST		
2	8:27 a.m.	New moon
7	3:00 a.m.	Mercury between sun and earth
10	1:22 a.m.	Moon in first quarter
	1:00 p.m.	Moon farthest from earth; distance 251,100 miles
17	9:03 p.m.	Full moon
21	2:00 a.m.	Moon passes Saturn
	4:24 p.m.	Sun farthest north; summer commences in Northern Hemisphere
23	7:00 a.m.	Moon passes Jupiter
	3:00 p.m.	Moon nearest; distance 229,600 miles
24	6:43 p.m.	Moon in last quarter
28	5:00 p.m.	Moon passes Mars
30	1:00 a.m.	Moon passes Mercury
Subtract one hour for CST, two hours for MST, and three hours for PST.		

Know the Sky to Watch Satellites

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, 81:330 May 26, 1962

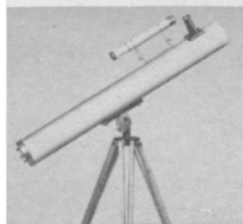
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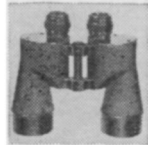
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