

ASTRONOMY

Venus Most Prominent

Venus, the only planet now visible in the evening, is a brilliant object in the sky and will soon be joined by the Leonids, "shooting stars."

By JAMES STOKLEY

➤ THAT BRILLIANT object you see in the southwestern sky these evenings as darkness falls is not an airplane, a flying saucer, or some bright light hung in the sky as part of an experiment.

What you see is the planet Venus, now reaching its greatest prominence, which comes just before its disappearance from the evening sky early in 1958.

Venus is far brighter than any other star or planet seen in the night sky and there is no difficulty in identifying it. Indeed, it can be observed long before the sky is dark. In fact, if you know where to look, you can even see it in broad daylight!

After it passed behind the sun last April 14, Venus has gradually been drawing to the east of that body. That meant that it followed the sun in its daily motion across the sky, and so remained visible in the west after the sun had set. On Nov. 18 it will be farther east of the sun, hence remaining in the sky for the longest time after sunset, nearly three hours. After that it will start moving toward the sun again.

Because of its early setting, Venus does not appear on the accompanying maps of the November evening skies, which show their appearance about 10:00 p.m., your own kind of standard time, at the first of November, 9:00 p.m. on the 15th and 8:00 p.m. on the 30th.

Bright Birds in the Sky

These maps do, however, show the stars that are now visible.

Toward the west is Deneb, at the top of the "northern cross," which is really part of the constellation of Cygnus, the swan. Deneb is in the bird's tail; in fact, the word is Arabic and means "tail." The crosspiece represents the wings, and the lower part of the cross his long neck, stretched forward in flight. At the head is Albreo, a star of the second magnitude on the astronomical brightness scale. Below Cygnus is another first-magnitude star, Vega, in Lyra, the lyre. To the left is another bird, Aquila, the eagle, with the star Altair.

High in the south you can see the four stars that form the "great square," part of the constellation of Pegasus, the winged horse. Although these are not among the brightest, their characteristic arrangement makes them a good starting place from which to find other groups. The horse, actually, is upside down in the sky, as the row of stars extending westward from the lower right corner of the square is his head!

The star at the upper right, Alpheratz, is

will in the coming months. Then you will see them high in the south.

Just above Orion is Taurus, the bull, with brilliant Aldebaran, and to the left of this figure stands Auriga, the charioteer, with first magnitude Capella.

Although only Venus is now visible in the evening, two other planets appear in the southeast before sunrise. Brightest of these is Jupiter, in the constellation of Virgo, the virgin. It is close to the bright star Spica. However, it exceeds the star in brilliance about ten times.

Farther east is Mars, rising about an hour ahead of the sun. Its brightness is about half that of Spica. Mercury and Saturn are both too near the sun to be easily visible in November.

Shower of "Stars" to Come

November is the month bringing one of the year's famous showers of meteors, or "shooting stars," which appear from about the 13th to the 16th.

They are most numerous after midnight, because then we are on the forward side of the earth in its annual movement around the sun. Thus, we meet them head-on. This is different from the evening hours when we are on the rearward part, and see only those that catch up to us.

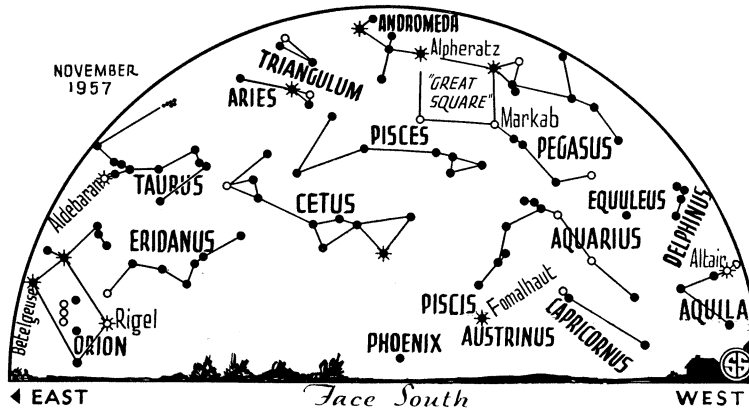
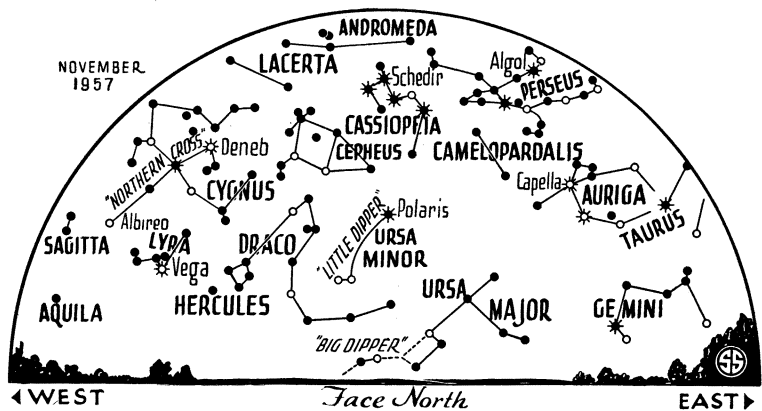
not in Pegasus at all, but in the neighboring group of Andromeda. This constellation represents the Ethiopian princess who, according to mythology, was chained to a rock to be devoured by a sea monster, represented by the constellation of Cetus, the whale, in the south. Fortunately, she was rescued by the hero, Perseus, who is seen in the north-east.

Andromeda's mother, Cassiopeia, is seen in the north, a group forming the letter M, above Polaris, the pole star. Alongside her is her husband, the king, Cepheus.

Turning now toward the east, we can see what is generally considered to be the finest constellation in the sky making its debut for the season.

Orion: Season's Finest

This is Orion, the warrior, easily recognized because of the three stars in a row that form his belt. To the left is Betelgeuse, to the right is Rigel, both of the first magnitude, although being so low in the sky they do not appear as bright as they



☆ * ○ ● SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

The moon will be just past last quarter, rising around midnight, so its light may interfere a little with the meteor display, although not as much as if there were a full moon.

Around 2:00 a.m., perhaps, a dozen of these meteors may be seen an hour, apparently radiating from a point in the eastern sky in the constellation of Leo, the lion. Because of this, the shower is known as the Leonids.

Actually the meteors are moving in a great circular swarm around the sun, which the earth crosses at this time of year, so their motion is parallel. The effect of seeming to radiate from Leo is one of perspective. Their tracks converge in the distance, like the parallel tracks of a railroad.

Meteors Come in Cycles

These meteors take about 33 years to encircle the sun, and at one point they are much more numerous than elsewhere. In 1833 and 1866 the earth encountered this concentration and there was a brilliant display, with meteors seemingly coming down almost like snowflakes.

By the next two times around, in 1899 and 1932, the dense cluster had been switched aside because of the gravitational attraction of Jupiter as it had passed near it. In these years, instead of a good display, the Leonid meteors were quite poor.

Despite the bombardment of the earth by these, and other meteor showers, the meteors do not reach the ground. They are tiny things, no larger than pinheads, and are completely burned by friction as they encounter the resistance imposed by the earth's atmosphere.

There also are stray meteors, not connected with any regular showers. Once in a while these are large enough to survive the passage through the atmosphere. One of the largest meteorites discovered is that found, along with two smaller ones, in Greenland in 1894. It measures 11 by 7 by 5 feet and weighs 36.5 tons.

Celestial Time Table for November

Nov.	EST	
2	7:00 a.m.	Moon farthest, distance 251,700 miles.
5	2:00 a.m.	Algol (variable star in Perseus) at minimum brightness.
7	9:32 a.m.	Full moon; total eclipse of moon visible in the Arctic, the Pacific Ocean, Australia and Asia.
	10:49 p.m.	Algol at minimum.
10	7:38 p.m.	Algol at minimum.
14	4:59 p.m.	Moon in last quarter.
16	Early a.m.	Leonid meteors.
18	2:00 a.m.	Venus farthest east of sun.
	6:00 a.m.	Moon nearest, distance 227,700 miles.
	9:57 p.m.	Moon passes Jupiter.
19	11:22 p.m.	Moon passes Mars.
21	11:19 a.m.	New moon.
25	8:35 a.m.	Moon passes Venus.
28	12:31 a.m.	Algol at minimum.
29	1:57 a.m.	Moon in first quarter.
30	2:00 a.m.	Moon farthest, distance 251,300 miles.
	9:20 p.m.	Algol at minimum.

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



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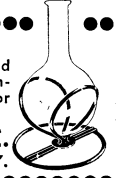
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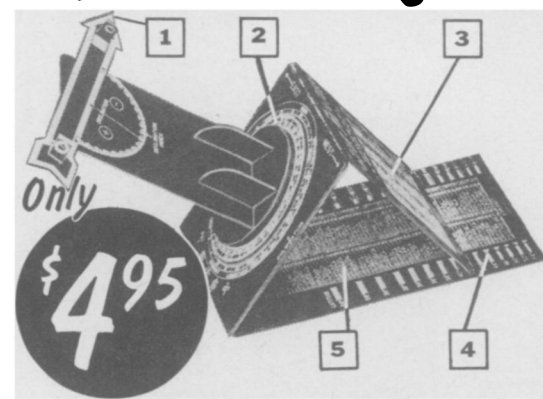
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