ASTRONOMY

# Four Planets

## Venus Joins Mars, Jupiter and Saturn, Making Brilliant Display in the Early Evening Sky

By JAMES STOKLEY

TO THE display of three planets, Mars, Jupiter and Saturn, that we have been enjoying in the evening for recent months, we now have an addition. Venus is drawing to the east of the sun and, in the middle of November, sets about an hour after sunset. By that time, and possibly even earlier, it should be possible to see it toward the west in the gathering evening twilight.

By December it will be seen without any difficulty whatever. Thus we shall then have four of the five naked eye planets all visible as evening stars at the same time, a very unusual occurrence. This will herald the brilliant lineup that will come at the end of next February, when this quartet will be joined by Mercury, making them all evening stars at once.

As a matter of fact, in November it may just be possible to get a glimpse of this same effect, because on November 7 Mercury is at its farthest east of the sun, and is in the evening sky. But it is so low, as seen from northern latitudes, that it will be hard to locate. People in the southern hemisphere will be able to see it more easily.

But when Mercury next comes east of the sun, and is again in the evening sky, about February 25, it will be much better placed for us. Venus will then also be better.

### Jupiter Brightest

Jupiter is now the brightest planet in the sky, and far exceeds any of the stars. It is in the constellation of Pisces, high in the south, as shown on the map. Mars is in Aquarius, farther to the west, as well as lower and fainter. However, it is still unusually bright, and easily found on account of its red color. Our other bright evening planet is Saturn, also in Pisces, to the left of Jupiter.

Vega, in the constellation of Lyra, the lyre, is the brightest star seen about 10 p. m. on November 1 or 8 p. m. on November 30, the times for which the maps are drawn. It is then in the northwest. Above is the northern cross, or Cygnus, the swan. To the left, directly west, is Altair, of Aquila, the eagle.

Capella, of Auriga, the charioteer, shines in the northeast, and near it, to the right, is Aldebaran, of Taurus, the bull. Below these is Orion, the warrior, whose belt is a vertical row of three stars. Betelgeuse is to the left, and Rigel to the right.

In addition to these stars there is one more now visible which is of the astronomer's first magnitude. This is Fomalhaut, in Piscis Austrinus, the southern fish, seen low in the south, below Aquarius.

A little later in the evening, about an hour after the times of the maps, Sirius, brightest of all the night-time stars, appears in the southeast. This follows Orion, and is generally called the dog-star, because it is in Canis Major, the great dog.

During the night of November 15 there will be a chance to see the meteors, or "shooting stars" of the famous Leonid shower.

### Annual Event

Each year, about this date, some are seen, though it has been about three-quarters of a century since the last time they put on a really sensational show. In 1866 and, even better, in 1833, they came in such numbers that the sky seemed to be filled with falling stars. In fact, they were the reason that 1833 is recalled as the "year the stars fell."

Meteors are small particles of iron or stone, the debris of space. When they enter at high velocity, several miles a second, the friction with the atmosphere ignites them, and they vanish in a flash of light.

A hundred million or more enter the atmosphere daily, so it is fortunate that we have this aerial armor to protect us. Even though most are no larger than a grain of sand, their speed is so high that they would constitute a serious hazard from which we now are spared.

Occasionally, it is true, a meteor arrives that is large enough to penetrate the atmosphere and to land on earth, when it is called a meteorite. There is, however, no clearly authentic record of a person having been hit by one, though a few buildings have been struck.

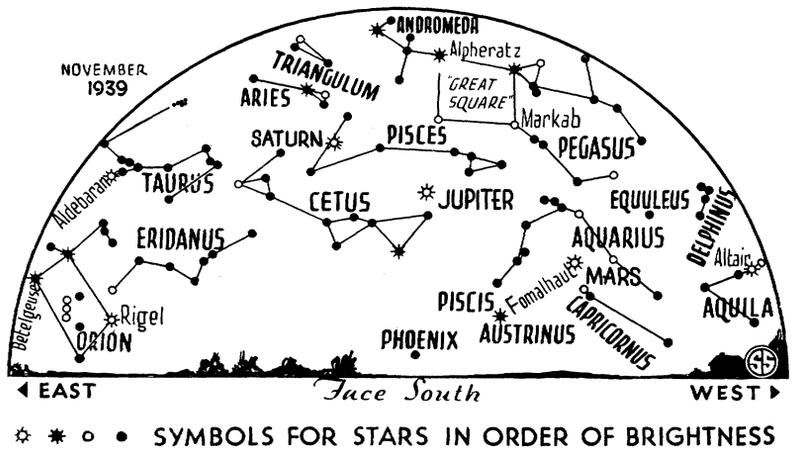
### Garage Hit

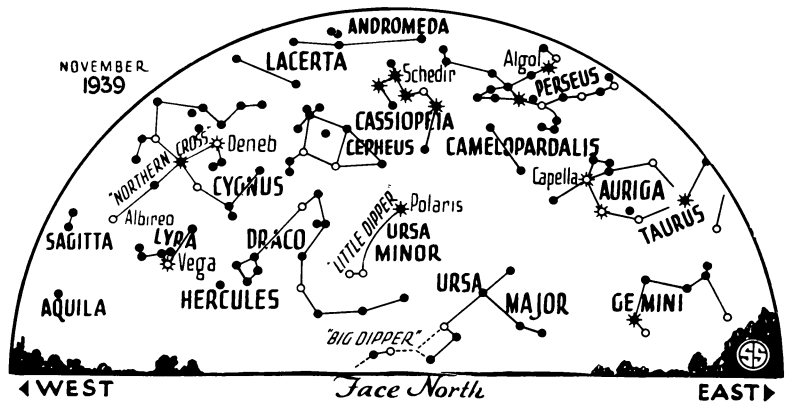
Last December a garage in Illinois was hit, and so was the car inside. The Field Museum, in Chicago, now has on display not only the meteorite itself, but the roof of the garage, with the hole it made, a similar piece of the car roof, the cushion in which it was found, and the muffler, which was dented by the impact!

Most of the meteors throughout the year are random ones, and many arrive at such speed as to show that they reach the solar system from outer space.

But the Leonid, and other showers, are moving in definite swarms, the remains of comets of days past. These swarms cross the orbit of the earth at various points. When, in our yearly motion, we reach such a point, we encounter a lot of the meteors of that particular shower.

Some of the swarms have the meteors rather uniformly distributed all around,






but that which we cross on November 15 has one large concentrated part, which takes about 33 years to go around. We went through it in 1833 and 1866, but on the two occasions since, when we might have met it again, it missed us, having been switched aside by the gravitational pull of Jupiter.

By now, however, we are approaching another part of the stream, which is probably still on its usual track. On most nights at this time of year we can see an average of 10 to 15 meteors per hour, but on the 15th, or better still, in the early morning of the 16th, one should see about twice as many.

The meteors of the shower may be distinguished from any strays that might come at the same time by reason of the fact that the former all seem to radiate from the constellation of Leo, the lion, which can be seen to the northeast soon after midnight. For this reason they are called the Leonid meteors.

They do not really radiate, however, but are moving in parallel paths. The radiating effect is one of perspective, the same thing that makes the parallel lines along the wall of a long, straight tunnel seem to come together in the distance.

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### Celestial Time Table for November

**Saturday, Nov. 4,** 8:12 a. m., Moon at last quarter. **Tuesday, Nov. 7,** 4:00 p. m., Moon nearest—228,100 miles; 10:00 p. m., Mercury farthest east of sun. **Saturday, Nov. 11,** 2:54 a. m., New moon. **Sunday, Nov. 12,** 10:42 a. m., Moon passes Venus; 7:24 p. m., Moon passes Mercury. **Monday, Nov. 13,** 1:00 a. m., Uranus opposite sun and nearest earth—distance 1,731,000,000 miles. **Wednesday, Nov. 15,** Leonid meteors. **Saturday, Nov. 18,** 6:21 p. m., Moon at first quarter. **Sunday, Nov. 19,** 7:22 a. m., Moon passes Mars; 2:00 p. m., Moon farthest—251,200 miles. **Tuesday, Nov. 21,** 4:49 p. m., Moon passes Jupiter. **Thursday, Nov. 23,** 7:49 p. m., Moon passes Saturn. **Sunday, Nov. 26,** 4:54 p. m., Full moon.

Eastern Standard Time throughout.

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MEDICINE

# Sulfanilamide Saving Babies Threatened With Peritonitis

BABIES and small children threatened with death from a highly fatal form of peritonitis can be saved by a new treatment including use of the chemical remedies, sulfapyridine and sulfanilamide.

Details of the treatment which cut the death rate from 73% to 20% at Children's Hospital, Boston, are reported by Drs. William E. Ladd, Thomas W. Botsford and Edward C. Curnen, of Harvard Medical School. (*Journal, American Medical Association,* Oct. 14)

Peritonitis generally brings to mind the dangerous complication of appendicitis when operation has been too long delayed. In the case of these babies (most of the patients were under four years old) there was no appendicitis and the peritonitis, called a primary type, followed infections of the nose and throat in more than half the cases.

Treatment consisted of making a small surgical incision into the abdomen, usually under local anesthetic, and drawing out a bit of the pus for examination to determine the germ causing the trouble. A drain is left in the wound to draw off more of the pus, and sulfanilamide is immediately given by hypodermic injection until the patient is able to take it by mouth. If examination of the pus shows that the germ is the pneumococcus (in most of these cases it is either the pneumococcus or the streptococcus) sulfapyridine is given instead of sulfanilamide and anti-pneumonia serum of the correct type is also given.

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PUBLIC HEALTH

## Safety Commandments For Fall Hunting

HUNTING season is upon us again. Sportsmen, seasoned and tyro, will be packing guns over hill and dale, hoping for a buck, or a duck, or anyhow a rabbit.

With a well-calculated sense of timeliness, one of the leading American manufacturers of sporting powders has prepared Ten Commandments of Safety for hunters. They are worth quoting in full:

1. Treat every gun with the respect due to a loaded gun. This is the cardinal rule of gun safety.

2. Carry only empty guns, taken down or with the action open, into your automobile, camp, and home.

3. Always be sure that the barrel and action are clear of obstructions.

4. Always carry your gun so that you can control the direction of the muzzle even if you stumble.

5. Be sure of your target before you pull the trigger.

6. Never point a gun at anything you do not want to shoot.

7. Never leave your gun unattended unless you unload it first.

8. Never climb a tree or a fence with a loaded gun.

9. Never shoot at a flat, hard surface or the surface of water.

10. Do not mix gunpowder and alcohol.

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