

ASTRONOMY

Scorpius Shines in South

Jupiter is also visible early on August evenings, and after midnight, Mars, Venus and Saturn appear. Many meteors can be seen this time of year.

By JAMES STOKLEY

► THAT CHARACTERISTIC constellation of summer—Scorpius, the scorpion—now appears in full view low in the southern evening sky. Brightest star in the group is red Antares; extending from it to the left is a curved row of stars that represents the scorpion's tail, so this is one constellation that does bear some resemblance to the thing after which it is named. In the next constellation to the left, which is Sagittarius, the archer, not much resemblance to that figure can be found. This group looks more like a teapot, with the spout of the teapot just over the end of the scorpion's tail, ready to dump its hot tea upon the arachnid!

Also in Sagittarius is one of the three dippers in the sky, and the least known of the set. The four stars that form the teapot's handle are the bowl of this dipper, while the handle extends upwards and to the right. It is called the "milk dipper," possibly from its proximity to the Milky Way of which the brightest part is in this direction.

The other dippers are in the north, as usual. Most people know the big dipper, part of Ursa Major, the great bear. It is now to the northwest, with the handle curving westward and pointing to the star Arcturus. The two lowermost stars in the big dipper are the pointers, whose direction indicates the pole star, Polaris.

In addition to standing almost directly over the north pole of the earth, and so always marking the north (always, at least, in our century, though not after a few thousand years) Polaris is at the end of the handle of the little dipper. This, in turn, is part of Ursa Minor, the lesser bear. Both bears are quite extraordinary in the way they were represented on the old star maps, since in each case the handle of the dipper was taken as the bear's tail, quite ignoring the fact that bears have only very short tails!

Stars Visible

Antares is a star of the first magnitude, and so is Arcturus. In addition, three other stars of this classification are visible these August evenings. Brightest is Vega, in Lyra, the lyre, directly overhead at the

times for which the accompanying maps are drawn—i. e., 11:00 p. m., your own kind of war time on Aug. 1, and 10:00 p. m. on Aug. 15. Southeast of Vega is Altair, part of Aquila, the eagle. High in the northeast is Deneb, in Cygnus, the swan.

In the early evening in August, setting around 10:15 on the first, is the planet Jupiter. It stands in the constellation of Virgo, the virgin, of which only part is visible on the map in the west. Jupiter's magnitude is minus 1.3, which exceeds that of any of the first magnitude stars mentioned.

Beginning after midnight, three other planets appear. Mars comes up about 1:30 a. m., in the constellation of Taurus, the bull, and just north of the bright star Aldebaran. Venus, the brightest of all (magnitude minus 3.5) is in Gemini, the twins, and comes up about an hour and a half later. Saturn, also in Gemini, comes up a little later.

Every August the earth, in its revolution around the sun, passes through the swarm of meteoric material that forms the so-called Perseid shower. So every year, about this time, we see in the nighttime sky a considerably larger number of meteors than we do normally. These meteors all seem to radiate from the constellation of Perseus, the champion, hence their name. Actually, the paths of the meteors are parallel and they seem to converge in the distance as the parallel

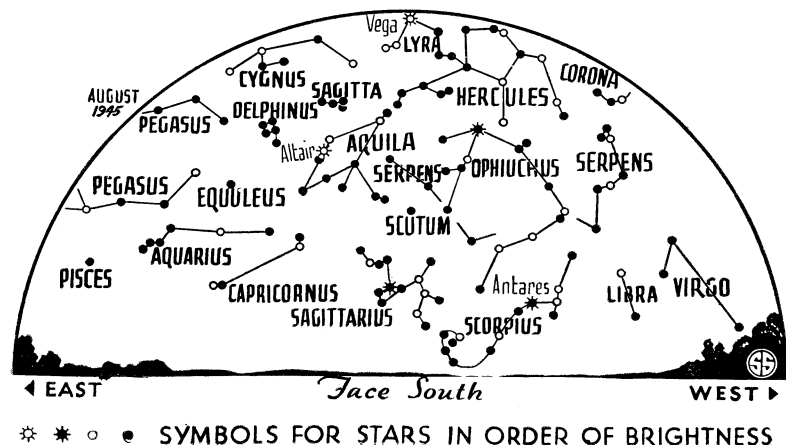
tracks of a railroad seem to run together.

Though these meteors are seen every year, the moon may sometimes interfere. If the night of Aug. 11, during which the shower is at its maximum, happens to be that of full moon the sky is so brilliant that the meteors are scarcely visible. But this year the moon is new on the seventh. During the night of the 11th it sets quite early, making the rest of the night dark.

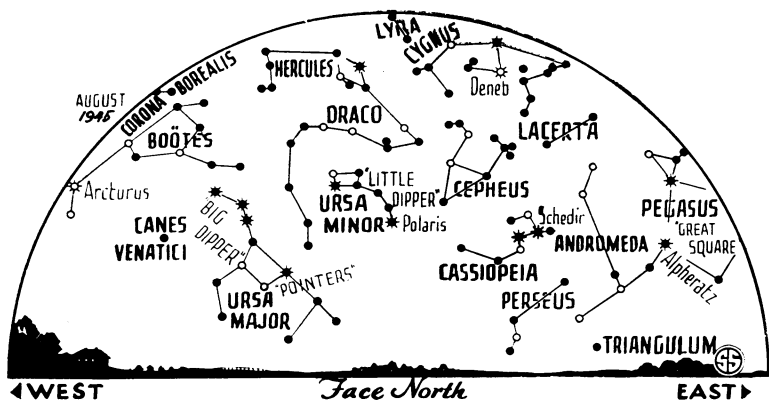
Meteor observing is a sport that requires late hours. Because of the way the earth turns in relation to its movement around the sun, those meteors we see before midnight have to catch up to us, but after midnight we meet them head-on, and they are more numerous. In the same way, as you walk along the street, you are more likely to pass more people going the other way than people going the same direction as yourself.

The stray meteors that are hitting the earth all the time are probably merely some of the debris that was left over when the solar system was formed, but the meteors of the regular showers seem to be the remains of comets. The Perseids seem to be associated with Tuttle's comet, last seen in 1862. Other comets are the parents of other showers. Temple's comet, for example, seen in 1866, is responsible for the famous Leonid shower which appears in November.

From the amount of light a meteor gives as it flashes through the air, it is possible to calculate its size, and this turns out to be very small, most meteors being of the order of size of the head of a pin. As this pinhead particle enters the earth's atmosphere at high speed, friction with



☼ * ○ ● SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS



the air heats it and it vanishes in the flash of light that we see. Occasionally a larger mass comes in, big enough to survive the passage through the atmosphere so it can land on earth. This is called a meteorite. Apparently the meteors of the showers are all small, for there is no authenticated case of a meteorite being identified with one of the showers.

Professional astronomers always appreciate amateur help in observing meteors. Dr. Charles P. Olivier, director of the University of Pennsylvania's Flower Observatory, at Upper Darby, Pa., is an authority in this field and welcomes reports from laymen. The simplest report is to count the number of meteors that you see in half-hourly periods, say

from midnight to 12:30, 12:30 to 1:00, 1:00 to 1:30 and so on. If you know the constellations, you can mark the paths of the meteors, particularly the bright ones, on a map.

Celestial Time Table for August

Aug.	EWT	
2	7:07 p.m.	Moon passes Mars
4	11:46 a.m.	Moon passes Venus
5	7:22 p.m.	Moon passes Saturn
7	8:32 p.m.	New moon
11	1:38 a.m.	Moon passes Jupiter
12	Early morning	Perseid meteors
14	2:00 a.m.	Moon farthest, 251,400 miles
15	8:36 p.m.	Moon in first quarter
21	Midnight	Venus passes Saturn
23	8:03 a.m.	Moon nearest, 226,500 miles
29	11:44 p.m.	Moon in last quarter
31	9:07 a.m.	Moon passes Mars

Subtract one hour for CWT, two hours for MWT, and three for PWT.

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and landing conditions, and must be instructed at which thousand-foot level to approach, when to drop a thousand feet to a lower level, and when and on which strip to land. Three kinds of government workers perform these services, air traffic controllers, meteorologists and aircraft communicators.

These men rarely see the planes whose progress they chart and direct along the airways of the world. They sit before inclined posting boards with movable cards on which are recorded radio reports of planes received from pilots when miles away. As the planes approach the cards are moved downward on the board, and off the board when the plane lands.

New York's station handles both overseas-foreign and interstate-domestic communications, distinguishing it from others of the 400 stations operated by the Civil Aeronautics Administration. The big gun of the station is the intercontinental transmitter WSY at Sayville on Long Island. All overseas communication is handled by the Administration.

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AERONAUTICS

Air Congestion Expected

Anticipating greatly increased traffic over LaGuardia Field after the war's end, officials are now planning improved facilities for radio direction.

➤ EXTENSIVE planning is now under way by officials concerned with LaGuardia Field on Long Island, New York City's great airport, for controlling sky traffic because of the enormously increased use of the field expected in post-war days. This means particularly radio communication with approaching planes, instructing them relative to weather conditions, what air levels to use, and when and where to land.

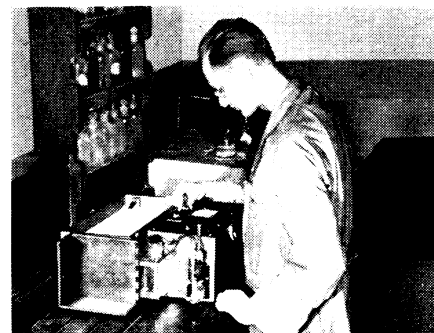
LaGuardia field is now one of the largest and busiest traffic control centers in the world, according to the U. S. Civil Aeronautics Administration. But, it says, a tremendous increase in business after the war may be expected, and preparations for it must be made now.

"New York's problem is complicated," the Administration states. "Here, at La-

Guardia Field, is a mixture of foreign traffic entering the streams of domestic traffic coming from every part of the continent centering at the country's greatest metropolis. New York is now, and will be increasingly, the terminus for inter-continental traffic."

Controlling sky traffic becomes increasingly important in bad flying weather. When instruments were developed to enable pilots to fly through storms and cloudy weather conditions, traffic control along the airways became necessary. Now, with many planes in the air in all kinds of weather, and scores converging on a spot like New York and other great American fields, the pilot must be helped to the ground.

The pilot must be given information by radio relative to weather conditions



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