the second half of the year, an average of about a dozen meteors per hour may be seen, but around Aug. 11 they come at the rate of about one a minute.

Sometimes the bright light of the moon seriously interferes, but that will not happen this year. The moon is at first quarter on Aug. 10, when it sets about midnight.

The best display of meteors always comes after midnight, for then we meet them head on. Those we see in the evening must catch up to the earth to be visible, for then we are on the rear of the planet as it hurtles through space.

### Celestial Time Table for August

Times are given in Eastern Standard. Subtract one hour for Central Standard, two hours for Mountain Standard, and three for Pacific Standard. Add one hour for the corresponding Daylight Saving time.

**Friday, Aug. 2,** 11:00 a.m., Venus greatest brilliancy. **Saturday, Aug. 3,** 3:09 p.m., new moon. **Monday, Aug. 5,** 10:00 p.m., moon nearest, 225,800 miles from earth. **Saturday, Aug. 10,** 5:00 a.m., Mercury farthest west of sun, morning star; 7:00 a.m., moon at first quarter. **Sunday, Aug. 11,** Perseid meteors visible. **Thursday, Aug. 15,** 8:00 a.m., Jupiter passes Saturn. **Saturday, Aug. 17,** 6:02 p.m., full moon. **Wednesday, Aug. 21,** 5:00 p.m., moon farthest, 252,000 miles from earth. **Saturday, Aug. 24,** 10:53 a.m., moon passes Saturn; 11:33 a.m., moon passes Jupiter. **Sunday, Aug. 25,** 10:33 p.m., moon in last quarter. **Thursday, Aug. 29,** 2:56 p.m., moon passes Venus.

*Science News Letter, July 27, 1940*

RADIO

## Two-Way Communication On Ultra-Short Waves

ULTRA-HIGH frequency radio waves were successfully used in two-way communication over a considerale distance for the first time in experiments by the Mt. Washington Observatory staff. Using a frequency of 225 megacycles, or about 1.3 meters, communication was established at a distance of 90 miles. Hitherto two-way ultra-high frequency radio has been limited to a few miles only. In the present experiments both voice and code were satisfactorily transmitted.

*Science News Letter, July 27, 1940*

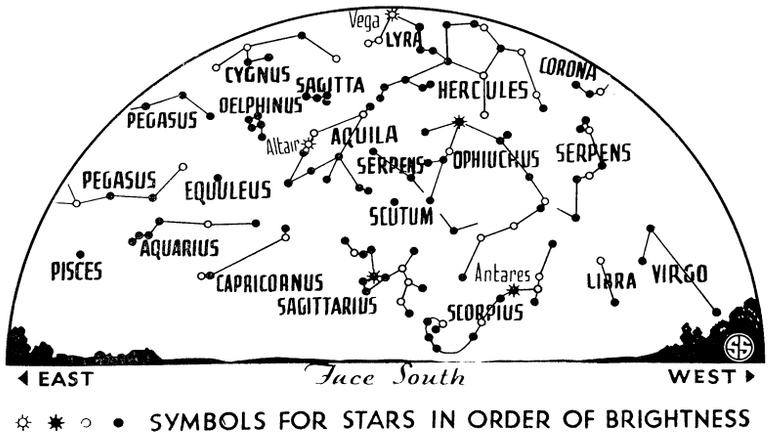
## Earth Trembles

**Information collected by Science Service from seismological observatories resulted in the location by the U. S. Coast and Geodetic Survey of the following preliminary epicenter:**

***Sunday, July 14, 1:52.7 a.m., EST***

**In the Aleutian Island region. Latitude 52 degrees north. Longitude 176 degrees east. Moderately strong shock.**

**For stations cooperating with Science Service, the Coast and Geodetic Survey, and the Jesuit Seismological Association in reporting earthquakes recorded on their seismographs, see *SNL*, Feb. 24.**




ASTRONOMY

# University of Pennsylvania Acquires Cook Observatory

THE MOST fully equipped amateur astronomical observatory in America will assume professional standing, when the University of Pennsylvania soon takes over the Cook Observatory, at Wynnewood, Philadelphia suburb. Dr. Charles P. Olivier, director of the University's Flower Observatory and professor of astronomy, announced that this bequest by Dr. Gustavus Wynne Cook, its founder who died June 4, had been accepted. Important observational programs which he began will be carried out, said Dr. Olivier.

A complete photographic map of the Milky Way, on plates 20 by 24 inches, was one of Dr. Cook's most ambitious tasks. This was being done with the world's largest "star camera." Photographs have already been made of a little more than half of the Milky Way which can be seen from this location. This will be continued by Lewis I. Tabor, who made the previous exposures, and has now been added to the University's staff, on a part-time basis.

Cooperating with American and foreign observatories in an international program, I. M. Levitt has been observing the sun with special instruments, including a spectrohelioscope, which shows the sun in the light of a single glowing element. Mr. Levitt, of the astronomical department of The Franklin Institute, has also been made a part-time member of the staff of the University, so his work will continue.

Another important instrument is a 15-inch horizontal refracting telescope, with which Dr. A. M. Skellett, of the Bell Telephone Laboratories, recently succeeded in observing the sun's corona by television. Until recently, it has only been possible to observe the corona at a total eclipse of the sun. The observatory also has a 28½-inch reflecting telescope, which is combined with a 9-inch refractor. The reflector is equipped with a powerful spectograph, for analyzing starlight, and will be used for special problems. A 14-inch Schmidt camera, a new and powerful tool for stellar photography, acquired shortly before Dr. Cook's death, will be used for star observations, and also for meteor photography.

To work with these instruments, two other members have been added to the University's staff. One, full time, is Dr. P. H. Taylor, who has just completed