

## Scorpion Shines in South

(Continued from p. 395)

### Celestial Time Table for July

JULY	EDT	
1	2:00 am	Moon farthest, distance 251,500 miles
4		Earth farthest from sun (for year), distance 94,450,000 miles
6	5:56 pm	Full moon (partial lunar eclipse, not visible in U.S.)
9	3:00 pm	Moon passes Saturn
13	3:00 pm	Moon passes Jupiter
	6:00 pm	Mercury behind sun
	9:58 pm	Moon in last quarter
16	2:00 pm	Moon nearest, distance 228,600 miles
20	5:43 pm	New moon, total eclipse of sun
25	6:00 am	Moon passes Mars
28	9:13 am	Moon in first quarter
	8:00 pm	Moon farthest, distance 251,200 miles

Subtract one hour for CDT, two hours for MDT, and three hours for PDT.

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### ASTRONOMY

## "Volcanic Activity" Claimed for Moon

► NEW EVIDENCE for "volcanic activity" on the moon is claimed by the Russian astronomer, Dr. Nikolai Kozyrev of Pulkovo Observatory, Leningrad, who in 1958 spotted gas escaping from the lunar crater, Alphonsus.

Now, Dr. Kozyrev reports in London that he has found molecular hydrogen being emitted from the lunar crater, Aristarchus, and he calls this gas "volcanic."

Dr. Kozyrev's belief that gas seeping out of cracks in the lunar surface is volcanic in origin is not generally accepted by astronomers either in this country, Britain or Russia, since there is no evidence for heat associated with the emission.

Dr. Kozyrev's report of his observations of Aristarchus is made in the British scientific journal *Nature*, 198:979, 1963.

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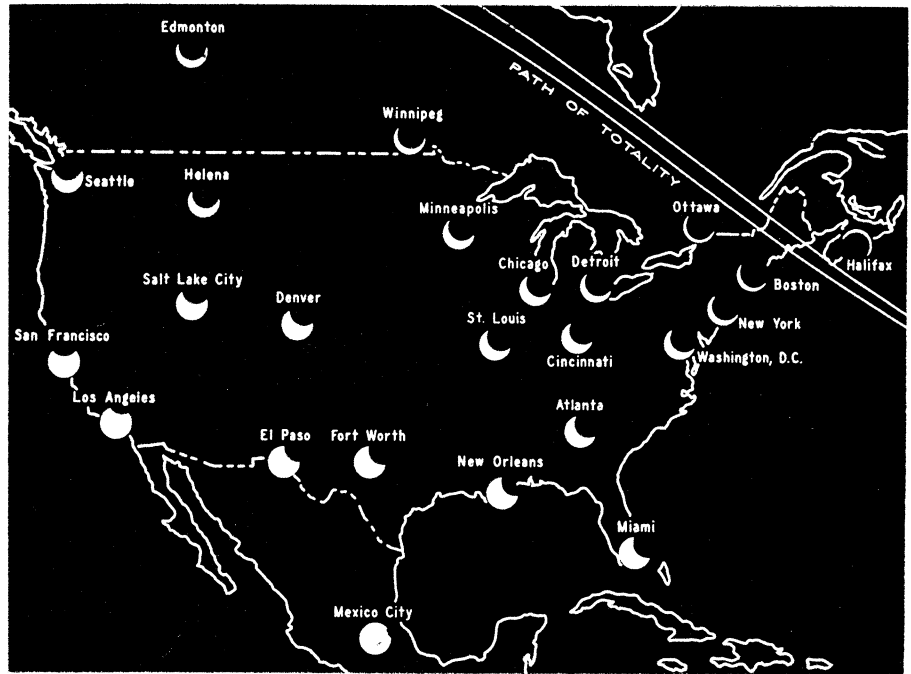
### SPACE

## Setting Sun Flattened Seen From Space Capsule

► OUR GLORIOUS SUN seems shaped like a sausage when observed from a space vehicle.

Photographs taken by Astronauts John H. Glenn and M. Scott Carpenter as they soared through space illustrate this striking phenomenon in the first scientific report of their observations by the National Aeronautics and Space Administration in Washington, D. C.

For more than a hundred years, scientists on earth have computed the refraction theory of the sun's rays. Depending on the curvature of the earth and the height of the capsule, the sun's image seems flattened because the solar rays are bent, or refracted, by the earth's atmosphere. Mrs. Winifred



U.S. Naval Observatory—Sky and Telescope

**ECLIPSE MAP**—This chart shows, for 24 cities in North America, how the sun's visible surface will appear at the time of maximum partial eclipse on July 20. In each case, the crescent is oriented as if the local horizon were parallel to the bottom of the chart.

Sawtell Cameron, Lt. Col. Glenn, Lt. Cdr. Carpenter and Dr. John A. O'Keefe of the Goddard Space Flight Center are authors of the report.

The higher up the space capsule goes, the more compressed the sun's image will seem from it. At certain elevations, the image will appear to be a thin crescent.

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### METEOROLOGY

## Making Rain at Bargain Price Foreseen

► RAINMAKING at a bargain is in the offing.

By coating large dry areas with asphalt, scientists hope to modify the weather and induce rainfall in dry regions. The black asphalt patches can store heat radiated from the sun. This heat in turn flows from the asphalt to the ground.

The ground then acts as a giant radiator and warms up the air. Being lighter, hot air rises and creates currents bringing moist air from the sea.

According to recent studies, this process could create rainfall at a cost of three cents for every 1,000 gallons. This estimate is lower than that for desalting sea water, building pipelines from far away rivers or constructing watersheds.

This new rainmaking idea was described at Mexico City by Dr. James Black, petroleum scientist, Esso Research and Engineering Company, Linden, N. J., at a conference on Hurricane and Tropical Meteorology, sponsored by the American Meteorological Society.

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### SOCIOLOGY

## New Farm Problem: Surplus Reproduction

► SURPLUS REPRODUCTION will soon be as big a farm problem as surplus production.

The fertility rate of farm families is high. Farm women have an average of 3.33 children, while city women average 2.26.

Proportionately, however, the farm population is decreasing. Less than nine percent of the U.S. population lived on farms in 1960. A century ago, the farmer accounted for 60% of the U.S. population.

As the farmer's efficiency increases, fewer hands are needed to feed the mouths of the nation. While in 1900 each farm worker supported 7.0 people, in 1961 he supported 27.4.

The decreased need for workers is coupled with an increase in the money a farmer has to invest for machinery. Good farmland is limited by acreage allotment programs and building for industrial, military and recreational facilities.

Young people find, for these reasons, that they cannot make a good living on the farm. They migrate to the cities, bringing their problems with them. Their educational lag is a handicap in an increasingly technological society where many will not be able to find jobs.

The U.S. already has the problem of surplus farm production. The Population Reference Bureau, 19:53, 1963, predicts it will be facing the problem of surplus farm reproduction by the 1970's.

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