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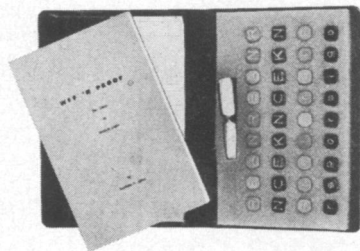
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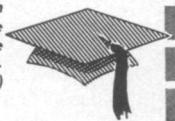
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ASTRONOMY

## Polarized Radio Waves From Distant Source

See Front Cover

► THE DISCOVERY of polarized radio waves from a distant source in the sky was made by scientists using a steerable radio telescope antenna, 120 feet in diameter, in Tyngsboro, Mass.

The unusually high degree of polarization observed, amounting to 38% of the received energy, indicates that unexpected physical conditions or processes exist in the direction of the radio source called W-3. Forces such as electric or magnetic fields cause the radio signals to line up or become polarized. In the absence of such forces the signal would oscillate equally in all directions perpendicular to the path of travel.

Evidence indicates that the emissions are produced by the OH, or hydroxyl radical, but just what it is that causes the polarization of the emission line is not yet clear.

Another mystery is that the OH emission does not come from the center of the W-3 source, but rather from a region offset from the center about one-fourth of a degree.

Drs. S. Weinreb, M. L. Meeks and J. C. Carter, all of Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, and Drs. A. H. Barrett and A. E. E. Rogers of the research laboratory of electronics, MIT, Cambridge, made the observations using Lincoln Laboratory's new Haystack Microwave Research Facility, Tyngsboro, as a radio telescope.

Receiving and transmitting units mounted in interchangeable "plug-in" rooms make it possible for Haystack to operate as a radio telescope, a long-range radar or an experimental terminal for communications research. An aerial view of the facility is shown on this week's front cover.

• Science News Letter, 88:356 December 4, 1965

ASTRONOMY

## Moon's Bulge Checked In Annular Eclipse

► WHETHER OR NOT the moon has a three-mile bulge around its middle is being checked by the scientists who took its picture every two seconds during the annular eclipse of the sun (Nov. 22-23).

The scientists set up an observing station in northeast Thailand to record the annular eclipse, which differs from a total eclipse in that the moon does not completely black out the solar disk. Instead, the moon is starkly silhouetted against the sun, making the sun's outer circumference visible as a nearly perfect circle.

This annular eclipse gives scientists a chance to check up on irregularities in the moon's shape found during two similar eclipses in 1962 and 1963. The apparent bulge shown in photographs taken then could have resulted from atmospheric conditions.

The scientific team comes from the Air Force's Office of Aerospace Research and the Lockheed-California Company.

• Science News Letter, 88:356 December 4, 1965

# Questions

**ANTHROPOLOGY**—What evidence indicates that Neanderthal man may have been far more advanced than formerly believed? p. 359.

**ARCHAEOLOGY**—How many years ago did Acheulian hunters enter the Congo basin? p. 361.

**ASTRONOMY**—What irregularity of the moon's surface, possibly the result of atmospheric conditions, was observed in photographs taken in 1962 and 1963? p. 356.

**MEDICINE**—What enzyme helps in detecting muscular dystrophy? p. 355.

**NATURE NOTE**—How far back do fossilized sea lilies date? p. 363.

**SPACE**—How many photographs of Mars did Mariner 4 send back to earth? p. 357.

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