

a 250-foot tower at North Truro, Cape Cod, Mass., as guests of H. M. Aldrich. Dr. Margaret Harwood, director, will lead the party consisting of Miss Marjorie Williams, Mrs. Francis W. Davis, Miss Merle E. Turner, Albert E. Brock, Edgar F. Sanborn, Jr., Gerald M. Reed, Jr. and Nathan C. Davis.

This only scientific expedition to be located on Cape Cod will make photographs of the corona designed to study photometrically the light of the corona, using a 4-inch photographic telescope. Visual observations will be made with another telescope.

Science News Letter, August 20, 1932

RADIO-ASTRONOMY

Sunspots May Interfere With Radio Observations

MAGNETIC storms may interfere with the radio observations of the total eclipse of the sun on August 31. This is predicted by A. M. Skellett of the Bell Telephone Laboratories, New York City.

Measurements of radio transmissions planned by numerous investigators during the eclipse will be related to the magnetic character of the day, Mr. Skellett pointed out. The state of the ionized regions of the atmosphere bears about the same relation to radio experiments as does the weather to the visual observations of the astronomers.

"On the basis of the 27-day recurrence tendency, it is probable that the earth's magnetic field and radio transmission will be disturbed moderately and possibly severely, the maximum disturbance occurring a day or so before the eclipse," Mr. Skellett predicted. "The date of the eclipse falls in a sequence of magnetic disturbances which have been active for at least three revolutions of the sun which has approximately a 27-day period.

"The latest storm of this sequence on August 1 or 2 has been of moderate intensity. A large sun-spot surrounded by bright hydrogen flocculi crossed the central meridian of the sun on August 2. On this basis a storm would be expected to begin on August 28 or 29 and might last until after the eclipse. Since the radio phenomena are different on days when magnetic storms occur from those on days without disturbance it is important that experiments to be carried out during the eclipse be planned with this possibility in mind."

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RADIO-ASTRONOMY

Bureau of Standards To Study Radio During Eclipse

With Apparatus on Both Sides of Path Scientists Will Hear Broadcasting Stations and Study Kennelly-Heaviside Layer

SCIENTISTS of the U. S. Bureau of Standards will make extensive studies of the radio effect of the eclipse of the sun on Wednesday, August 31.

From a field location either in north-eastern Maine or eastern Nova Scotia and simultaneously from the permanent laboratories at Washington, physicists and radio engineers under the direction of Dr. J. H. Dellinger will record the effects of the eclipse on the field intensities of received radio waves and on the height of the ionized or Kennelly-Heaviside layer.

The Washington location is expected to be very satisfactory for studies of changes in the ionized layer due to the optical eclipse as it is nine-tenths total at the earth's surface and somewhat nearer totality in the ionized layer above Washington.

The purpose of the observation in Maine or Nova Scotia is to test for the existence of effects in the ionized layer due to neutral corpuscles shot off from the sun. Professor S. Chapman, British physicist, has presented considerable evidence to show that the ionization of the lower part of the ionized layer, called the E-region, is probably produced by these corpuscles. (*SNL*, July 30, p. 75; Aug. 13, p. 95). Because the velocity of the corpuscles is much less than that of light, and because of the motions of the moon and earth during passage of the corpuscles from the moon to the earth, the corpuscular eclipse should occur two to two and one-half hours earlier than the solar eclipse, and farther to the northeast. These differences, particularly the difference in time, allow the effects of ultraviolet light and neutral corpuscles to be separated.

To Measure Ionized Layers

Three members of the Bureau of Standards staff will take to Maine or Nova Scotia two small pulse-signal transmitters, and an automatic recorder and a cathode ray oscillograph for measuring ionized layer heights. They will also observe the critical frequencies and heights of both the E and F regions of

the ionized layer. In order to help interpret the records obtained during the eclipse, observations will be made for several days preceding and following the eclipse.

Records of field intensities of received waves from broadcasting stations, and possibly from a high-frequency station, will be made both at Washington and on the eclipse expedition.

Dr. Dellinger explained that this type of work differs from the visual and some other observations in that it will not be prevented by clouds; and that there is reasonable certainty that successful work will be done.

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ASTRONOMY

Lights Out During Eclipse, Astronomers Ask

COOPERATION by amateur observers at the total eclipse of the sun over New England and Canada on Aug. 31 is requested by the astronomers, in order that any unwitting interference with the professional observations may be avoided. The eclipse committee of the American Astronomical Society, of which Dr. Frederick Slocum, of the Van Vleck Observatory at Middletown, Conn., is chairman, has requested laymen in the path of totality to avoid doing anything that might so interfere.

Tourists driving automobiles are requested to park their cars some time before the total eclipse, which comes about 3.30 P. M., Eastern Standard Time. Even though it will become dark enough to see the stars, they are requested not to turn on automobile lights. The glare from a single pair of head lights would ruin the view of all the observers in range. Similarly, town and city officials and residents of houses within the path, are requested not to turn on lights on streets or in buildings. The darkness will last less than two minutes even where longest, so all ordinary traffic and other activities can be suspended during totality.

Though dozens of groups of profes-