RADIO DATA TIMED TO SUNSPOT FLARE

Records of May 10 Coincidence Reported to Astronomers — Society Elects Dr. Joy

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OTTAWA, June 22—A striking case of coincidence between the occurrence of a great flare on the sun and its effects on the earth's atmosphere and magnetism was described here today by Grote Reber of the United States Bureau of Standards, and Dr. Helen W. Dodson of the McMath-Hulbert Observatory, University of Michigan. They presented their observations before the closing session of the eighty-first meeting of the American Astronomical Society.

The events of May 10, last, were observed to occur within five seconds of each other by astronomers photographing the sun through their telescopes; by radio men, receiving with radio-telescopes the direct solar radio "noise" or checking their reception from distant stations, and by geophysicists in measurements of the earth's magnetic field.

Concurrent Observations

Regular observations of the sun's surface are made at the McMath-Hulbert Observatory. At 3:30 P. M. (Eastern Standard Time) on May 10 a large bright flare of hydrogen light occurred over the region of a sunspot group and lasted about two hours seventeen minutes. The most intense portion of the flare lay directly over one of the principal components on a sunspot group, and it is believed that the location and extent of the flare were strongly influenced by the underlying spots.

At the solar radio observing station of the Bureau of Standards at Sterling, Va., Mr. Reber and his associates recorded a tremendous burst of solar noise on two microwave frequencies, 160 megacycles and 480 megacycles. The first was about three minutes before the time of the flare seen at McMath-Hulbert Observatory, and the second two minutes before the flare.

At 3:10 P. M. the radio noise from the sun had reached its maximum energy, 286 times increase in intensity at 160 megacycles and about 1,000 times increase at 480 megacycles.

Meanwhile ultraviolet solar radiation released by the flare or at the same time as the flare occurred must have played havoc with the ionospheric layers of the earth's atmospheric envelope. At Sterling is operated an eight-megacycle transmitter that sends up to the ionosphere its own signal and receives that back again, precisely at 3:03 P. M. This returned signal began to decrease in intensity, with maximum effect at 3:18.

Geomagnetic Effect Noted

At Sterling, also, shortwave receivers monitor station W8XAL in Mason, Ohio, and station GLH in London, England. At 3:02 W8XAL began to fade at Sterling, and a minute later, just when the flare was seen, GLH lost strength rapidly.

At 3:03 P. M., at Cheltenham, Md., where the Department of Terrestrial Magnetism operates a geomagnetic station, a magnetic "crochet" occurred in the continuous records. Variations causing this effect took place both in the direction and in the strength of the field, which rose to a temporary maximum at 3:15 and returned to normal by 3:45 P. M.

At the annual business meeting of the American Astronomical Society, Dr. Alfred H. Joy of Mount Wilson Observatory, Pasadena, Calif., was elected president for a three year term. He succeeds Dr. Otto Struve of Yerkes and McDonald Observatories, of the University of Chicago. A vice president elected was Dr. Dirk Brouwer, director of Yale University Observatory.