

RADIO-ASTRONOMY

Meteors "Flash" to Radar

► "SHOOTING STARS" flash into view for all observers at about the same instant and disappear as suddenly for all. But radio experts observing radar screen "pips" caused by reflections from the ionized path of these visitors from space find that the meteor signals last longer when they tune in at a lower frequency.

Throughout an entire year V. C. Pineo and T. N. Gautier of the Central Radio Propagation Laboratory of the National Bureau of Standards clocked meteors at the NBS radio field station at Sterling, Va., about 30 miles west of Washington. Meteors lasted about twice as long when picked up at 27.2 megacycles as when their "pips" were captured at 41 megacycles, they report in *SCIENCE* (Nov. 2).

Their studies confirm an earlier report by Dr. A. C. B. Lovell, director of radar research on meteors at England's University

of Manchester. Dr. Lovell concluded that the duration of a meteor on a radar screen is roughly inversely proportional to the square of the frequency used to pick it up.

Research such as this helps scientists understand what is happening in the upper atmosphere. It enables them to check different theories about how atoms in the upper air are stripped of their electrons as the "shooting stars" race by, and how they are reunited.

Recombination of the atoms does not play as important a part in the echo as their diffusion, Mr. Gautier concludes. Recombination is rapid at first, then takes place much more slowly. In the meantime the ionized atoms are spreading out, and having less and less effect on the radar screen. This combination of effects is reflected in the varying times at which the "pips" can be picked up at different frequencies.

Science News Letter, November 10, 1951

PUBLIC HEALTH

International Air Tackled

► FOR THE first time, so far as is known, the technical and scientific resources of two nations are being combined to determine the effects of air pollution on the health of populations. J. R. Menzies, chief of the public health engineering division of the Canadian Department of National Health and Welfare, declared at the meeting of the American Public Health Association in San Francisco.

Pollution of the air in the Detroit, Mich.-Windsor, Ont., area is the project now getting this international scientific and technical study. Smoke, soot and fly ash from the 30,000 or so passages of vessels each year on

the Detroit River pollute the air of the region. In addition to the river traffic fuel consumption, about 16 million tons of coal are burned annually in the highly industrialized Detroit-Windsor area, besides other fuels such as gas and oil.

The International Joint Commission on Air Pollution has since 1949 had studies under way to determine the extent of air pollution in various parts of the Detroit-Windsor area.

When enough information is available from these studies, the Commission will gather information on the health, particularly on diseases of nose, throat and lungs,

of six groups of citizens. Each group will be chosen to represent a particular social and economic status in areas of varying degrees of intensity of air pollution. The plan now is to include about 5,000 family units, 500 of them in Windsor and the rest in Detroit. Assuming four persons to the average family, this will give information on about 20,000 persons.

Meteorological conditions in the area will receive special attention throughout the investigation.

Science News Letter, November 10, 1951

SCIENCE NEWS LETTER

VOL. 60 NOVEMBER 10, 1951 No. 19

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc. 1719 N St., N. W., Washington 6, D. C., North 2255. Edited by WATSON DAVIS.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

Change of address: Three weeks notice is required. When ordering a change please state exactly how magazine is now addressed. Your new address should include postal zone number if you have one.

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Printed in U. S. A. Entered as second class matter at the post office at Washington, D. C. under the act of March 3, 1879. Acceptance for mailing at the special rate of postage provided for by Sec. 34.40, P. L. and R., 1948 Edition, paragraph (d) (act of February 28, 1925; 39 U. S. Code 283), authorized February 28, 1950. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to periodical literature, Abridged Guide, and the Engineering Index.

Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 393 7th Ave., N.Y.C., Pennsylvania 6-5566 and 360 N. Michigan Ave., Chicago. STATE 2-4822.

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The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

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