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Stars, Men and Atoms

Radar Mirrors to Study Broadcasts from Sun

Objective Is to Find Practical Value By Predicting Time and Intensity

By Thomas R. Henry

A special receiving station for radio broadcasts from the sun is being set up by the Bureau of Standards.

From the sun's hot surface radio waves of various lengths constantly are being poured into space. At present they are only a nuisance, trespassing on the terrestrial transmission bands causing noise which interferes with reception and sometimes blots it out altogether.

This noise, which appears only at ultra high frequencies, ordinarily is a steady hiss. Sometimes there are "puffs" and "swishes" lasting for a second or more, and sometimes a disagreeable grinding sound. Intense bursts of solar transmission, probably associated with sunspots, may last for several hours and entirely knock out a radar pointed in the direction of the sun.

Will Capture Solar Energy.

In order to learn more about the phenomenon, two giant radar mirrors at the Bureau's field station at Sterling, Va., will be directed at the sun, by an automatic control mechanism, constantly during the day. The reflectors, about 25 feet in diameter, allow the capture of a large amount of energy from solar broadcasts. The first such receiver now is in process of installation.

One objective of the observations is to predict the times and intensity of these solar broadcasts.

When more is known about them, it may be possible to harness those solar broadcasts for several uses. One of these now contemplated is a radio sextant for navigation. It would determine the position of a ship from the direction of arrival of the solar broadcasts. This device would permit navigation by solar observations even though the sky is overcast, and thus would have considerable advantage over radio direction finding systems, such as loran, which require ground stations.

Other Broadcasts Traced.

Not only the sun but the Milky Way, the enormous aggregation of stars which form the system of which the sun and its planets are a minute part, constantly is broadcasting. It sends out its messages on slightly different wave lengths than the sun. The Bureau of Standards specialists are trying to differentiate precisely between the two.

Eventually it is hoped to interpret the Milky Way messages and thus, it is possible, learn something of the structure and mechanics of the galaxy which cannot be learned from telescopic observations.

The main center of the Milky Way broadcasts is approximately the center of the galaxy, the constellation of Sagittarius. Because of this, there is a slow change in the intensity of the broadcasts as the position of the earth changes in space relative to this constellation, the bureau specialists say.

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