

A S T R O N O M Y

by Grote Reber

During 1932 K. G. Jansky (deceased) of the Bell Telephone Laboratories discovered quite by accident that radio waves were coming from the sky. These radiations are a phenomenon of nature like star light and have no intelligent origin. In common with most of the rest of astronomical knowledge, they have no practical importance but their study has considerable intellectual appeal as they provide information upon the nature of the universe in which we live.

An investigation of these radiations was undertaken at Wheaton in 1937. Surveys of the sky were made at two different wavelengths 1.88 meters and 0.63 meters. It was found that these radio waves come from a variety of directions, all associated with the Milkyway. In particular they are most strong from the constellations of Sagittarius, Cygnus, Cassiopeiae, Canis Major and Puppis. The origin of these celestial radio waves is unknown. However they may be due to the interaction of Cosmic Rays and clouds of dust in interstellar space. In any case they come from a very great distance, far beyond the solar system.

During the above studies it was discovered in 1943 that radio waves were also coming from the Sun. These seemed to have some ~~XXXXXXXX~~ importance as indicators of solar activity. Since long distance communication via radio is dependent upon the ionosphere and the ionosphere is subject to vagaries of solar activity, it appeared that solar radio waves were worthy of further study. Consequently

the writer spent a couple of years assisting the National Bureau of Standards get set up to make such observations.

A year or more ago it was decided to pick up the studies of celestial radio waves where they were left off at Wheaton. Since the wavelengths under investigation are several million times as long as light waves, strictly optical procedures can not be used. However it seemed that significant results would be secured if observations could be made from a very high place which had water all around the horizon. Thru the cooperation of the people of the Territory, a lease has been secured on a suitable site nearly two miles high in Hawaii. Construction work has been in progress for most of the past year and should be completed by next autumn. The present investigations are being supported in part by the Research Corporation of New York.

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