COMMONWEALTH OF AUSTRALIA

COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION

DIVISION OF RADIOPHYSICS

JLP:SA

TELEGRAMS: CORESEARCH, SYDNEY
TELEPHONE: MW 2484

UNIVERSITY GROUNDS,
CITY ROAD,
CHIPPENDALE, N.S.W.

REFER TO A1/3/1

23rd October 1953

Mr. G. Reber,
Wailuku,
Maui,
HAWAII.

Dear Reber,

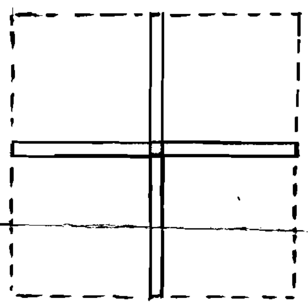
I was interested in your ideas of trying to observe cosmic noise at low frequencies using the penetration of the ionosphere by the extraordinary wave along a line of magnetic force.

I do not know enough about the theory to appreciate the possibilities and limitations. The only discussion I know of is that by Story in a recent Phil. Trans. in connection with "whistlers". You might find it worth reading. (Story is one of Ratcliffe's people).

With regard to searching for a noise level component showing a sidereal time variation, I do not know where to get a suitable series of observations. I do not think such a series has been taken in Australia. All I can think of is the records which were taken in the U.S. in the 1920's. Some of these appeared in the P.I.R.E.; alternatively they may exist in old files of the radio communication companies. You might be able to get some by writing to these.

Our own efforts at reduction in frequency have stopped at 9 Mc/s. We have a first-class series of observations at 18 Mc/s and a scrappy one at 9 Mc/s. The general trend is still the same. At 9 Mc/s brightness temperatures of nearly a million degrees are found. Shain did the work, which is not yet published. It would be thoroughly interesting to measure noise levels at much lower frequencies. Perhaps rockets are the answer - when they can go a bit higher.

Our latest cosmic noise venture will interest you. It is in competition with the big parabolas and is an aerial system consisting of a cross which utilizes interference so as to be equivalent in resolving power to the square surrounding the cross (see sketch). By utilizing interference only the area in the sky common to the beams of the individual arms is visible. We have under construction a 500-yard model which will operate at about 85 Mc/s.



Your photos are most intriguing. I should love to visit you and see it all.

Yours sincerely,

J. L. Pawsey

(J.L. Pawsey)

Postmarked Sydney 10 am Oct 23rd,