Radiophysics Laboratory,
C.S.I.R.O.,
University Grounds,
Chippendale, N.S.W.

20th February 1951

Mr. G. Reber,
Post Office Box 4868,
Cleveland Park Station,
WASHINGTON 8, D.C., U.S.A.

Dear Reber,

Many thanks for your letter of June 4th 1950 and apologies for failing to answer your final paragraph for so long. However, the delay was inevitable as I indicate below.

I am afraid that I still disagree with your explanation of bad 25 cm. interferometry over the sea although I do agree that duct phenomena may also play an important part on occasions. Your paragraph (b), eleventh line, shows that I did not make myself clear on my main point. I was not concerned with side lobes at all but simply the main lobe of overall width, say 5 degrees. Energy reaching the aerial from a point source, reflected at a rough sea surface will do so over a large solid angle (a cone of perhaps 10 - 20 degrees) and hence most of it will not enter in the main beam. Even if it did it would have travelled varying path differences and would not give an interference pattern. The effect becomes more marked with decreasing wavelength.

However, the shot is to try an experiment. I do think that calmer seas may provide sufficiently good conditions and I would be interested to hear your results.

I enclose a draft of a paper by H.C. Minnett and myself on 1200 Mc/s and 3000 Mc/s galactic radiation. The experiments have suffered numerous delays and I have not previously felt that discussion was desirable. The draft is the first and alterations may be made subsequently. Because of this and the inevitable long delay before publication I must ask you to treat it in reasonable confidence although there would be no objection to its discussion in a general, non-quantitative way.

A second paper on the Cygnus region is being prepared and I will let you see an early copy.

I hope to hear something of your more recent work in the near future.

With kind regards,

Yours sincerely,

J. H. Piddington

(J.H. Piddington)