

# BELL TELEPHONE LABORATORIES

INCORPORATED

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IN REPLY REFER TO

Box 107, Red Bank, N. J.  
November 8, 1945-1630-GCS-MGM

REPLYING TO

MR. GROTE REBER  
212 West Seminary Ave.  
Wheaton, Illinois

My dear Mr. Reber:

This is a somewhat belated reply to your very kind letter of September 20.

I was, of course, very glad to hear about the results of your more recent experiments. It is certainly interesting that you should find no trace of cosmic static at 480 mc whereas you found plenty of it at 160 mc. Its occurrence at both 20.6 mc and at 160 mc would hardly suggest that it should be entirely absent at 480 mc. I don't quite see why you should have been disappointed at this result. I should think that the thrill would have been even greater than if it had been present. You mentioned that your newer amplifier may have been inferior to the older one. It couldn't have been very poor or you wouldn't have been able to see solar noise.

We have been very busy with other matters and so far haven't been able to get back to solar measurements. We are, however, revamping our equipment and hope to get a few measurements before the coldest weather sets in. Although we won't have the advantages of an equatorial mounting we will have certain electrical improvements that may net us another order of magnitude in our sensitivity. I shall, of course, try to let you know if we find any cosmic noise. Did your sun noise seem to be in general agreement with the Rayleigh-Jeans relation?

One of my colleagues, Dr. C. H. Townes, has recently pointed out that my earlier calculations of solar radiation were too high by a factor of about three. Accordingly the graph of Fig. 2 of my Journal of the Franklin Institute paper should be lowered by about one-half division. This increases the discrepancy between calculation and experiment for two of the experimental points and decreases it for the third. The newer result is probably still well within the range of my experimental errors and accordingly it has little effect on the outstanding question as to whether or not solar noise is truly black-body radiation. I have also noted "ad nauseam" that the units of

Mr. Grote Reber -2

Equations 2 and 3 should be ergs per cc and those for the Planck constant should be erg. sec.

With kindest personal regards, I am

Very sincerely,

  
G. C. Southworth