May 9, 1945
212 W. Seminary Ave.
Wheaton, Illinois

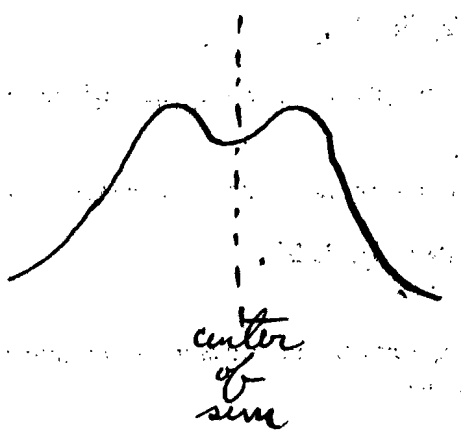
Mr. G. C. Southworth
Bell Telephone Labs.
Box 107
Red Bank, New Jersey

Dear Mr. Southworth:

The paper following yours in the Journal of the Franklin Institute is about eclipses. It has occurred to me that a very interesting test might be performed with your apparatus if it could be moved into the path of totality.

The data shown on curve 3 of figure 4 of your paper seems to indicate the diameter of the sun to be much larger than it appears visually. Now it is my hunch that considerable of the observed radio emission is not generated in the photosphere but rather in the corona. Thus at the time of totality we would have an intensity versus angle curve as sketched below when you sweep across the sun. At present I believe the corona will be more or less evenly distributed around the sun. However if large streamers are present along the axis of the sun then a sweep up-and-down may give a substantially different curve than back-and-forth. If some of the radiation is generated in the corona it is likely that this part has a different intensity-frequency function than that generated on the photosphere.

Probably you have thought of the same problem and all that remains is carrying out the work. Apparently another eclipse will not occur so close to us again for a considerable time.



Yours very truly,

Grote Reber

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