

CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA

1201 E. California St.

NORMAN BRIDGE LABORATORY OF PHYSICS

May 28, 1937

Mr. Grote Reber,  
212 West Seminary Avenue,  
Wheaton, Illinois.

Dear Mr. Reber:

Your letter to the Mt. Wilson Observatory has been turned over to me for reply because I have made some calculations on the same subject. Incidentally at the California Institute of Technology some experimental work has been carried on along the same line by Potapenko and Folland, but they were obliged to drop it for the present without having obtained very definite results. Their preliminary findings were not in disagreement with Jansky's report and there are indications that the interstellar signals occur in a rather narrow band around  $15 \pm 1$  meters in wave-length.

The calculations you mentioned in your letter are very interesting but call for several comments.

1) If the energy of the interstellar signals is 100 times what we get at the same wave-length from the black body radiation of the sun then it is enormously more than what we get from all the other stars put together.

2) If there is enough dark matter at 500 degrees to give the required signal strength at 15 meters then the effect at 5 mu would be ever so much larger and the heat radiation from the locality would be very easy to detect radiometrically. Such radiation has never been observed.

3) The region  $28^\circ$  on a side which you say is radiating at  $500^\circ$  Absolute is dissipating energy at a rate vastly greater than the rate energy is being delivered by the stars. If the energy source is just the heat of the dark nebula the material would cool down to  $5^\circ$  Absolute in a time very short compared with the age of the nebula. In fact it would seem to be that the nebula would cool down in a few minutes unless heat were being supplied from elsewhere.

Yours truly,

*R. M. Langer*  
RML

R. M. Langer

RML:HL