24th March 1957
G.P.O., Hobart
Tasmania, Australia

Dear Hap:

The purpose of this letter is to ask you to send down here via air mail 25 sheets of Keuffel & Esser number 359-71 graph paper. This is 3 cycle semilog by 10 lines to the inch in orange on thin transparent paper. The ink and cable connectors arrived OK. Thanks very much.

I've enough data to work up now, but not enough graph paper. This experiment has been a success and I've found what I was looking for. There is a strong celestial compenent coming down thru a hole about five degrees in diameter close to 25 degrees north of the zenith. This hole has two trap doors. The one at the bottom is "D" regian absorption about 60 miles up and keeps the hole closed during the day. The trap door at the top is caused by an infinity in the propagation of a longitudinal wave. This trap door closes or opens depending upon whether or not more or less material surrounds the night side of the earth at a distance of some 1500 miles.

Also it develops that auroral particles are capable of creating Cherenkov radiation in the region just below the infinity. With the present increase of solar activity there is more and more material surrounding the earth and more auroral particles. Thus the trap door is remaining closed an increasing amount of the time and the Cherenkov radiation is becoming more frequent. Obviously these kind of experiments should be put off for a few years until the solar activity quiets down.

I intend to continue observations until the winter solstice and then fold up. The results will be written up before then and sent to the Journal of Geophysical Research. All my apparatus will be packed up nicely in good wooden cases and put in storage here for use at a future day. I expect to return by boat in early August and will stop in Hawaii to see what circumstances are there.

I will keep you advised of my progress. My future plans are quite open. If you know of something interesting to do, please pass on what ever turns up.

Best regards,

Grote Reber