

July 26th, 1954
General Delivery
Wailuku, Maui
Terr. of Hawaii

Mr. Charles H. Schauer
Research Corporation
405 Lexington Avenue
New York 17, New York

Dear Hap:

Considerable water has gone over the dam since last May, so it is time to write again. Early in June I was able to engage the assistance for the summer of an above average Portugese young fellow. He has turned out to be a good operator and doesn't mind working atop the mountain in the early hours of the morning. I hope to be able to use his services until school starts in September.

Also in June I changed over to 100 megacycles frequency. Together, we have amassed a considerable amount of data in the past month and a half. 100mc is substantially better than 50mc and some useful results can now be secured during the day. However the faint sources must still be observed at night. While the sample of data is still rather small to form a judgment upon, it is clear that the results secured here are much less reliable than the results secured in Australia using the same technique and the same frequency of 100mc. Thus my suspicions of the past year seem confirmed that the tropics are not the place to do radio astronomy experiments. The cause of the situation is not totally clear, but is associated with a much greater depth and turbulence of the upper parts of the ionosphere near the equator.

My intentions are to leave the installation here intact and to return at a later date for observations at 200mc and 500mc. While such observations were not originally contemplated, it seems that they should be made in order to get a complete picture of the situation over the largest possible frequency range 30 to 500mc. These high frequency observations can be made at any time as the solar activity cycle will have no effect. Also the expense involved should be limited to the purchase of some additional electronic equipment and operations costs. No new construction will be necessary. Unless something startling is turned up the adventure at Kole Kole may then be considered closed.

The Australian adventure is gradually shaping up. Enclosed is a letter from Dr. Hogg (please return it). I will be working under their auspices at their field station near Hobart. As you can see, they appear quite interested and wish to be helpful. My plan is to leave here October 12th aboard the RMS Orion of the Orient line. The Orion arrives in Sydney on November 1st. With me will go twelve cases of scientific equipment which should include everything I need. Only poles will have to be set up and wires strung at Hobart. I expect to be making observations sometime in December. The best time for these kind of observations are the months March thru August. Thus adequate time should be available.

The financial situation is as follows; namely, most of the money has been used up. The Australian consul has some misgivings about granting me a visa because I have no visible means of support and because I wish to stay in Australia for a long time without seeking employment. He has agreed to consider me financially reliable if I will show to him a bank draft for sum of \$3000 plus \$500 in travellers checks. If possible I would like to have you send to me two checks made out to me. One for sum of \$3000 upon a New York bank negotiable in Australia. The other for \$1500 upon your bank negotiable here. The later is to carry along the operation here until I leave in October. Just before I leave I will make up a statement showing how and for what the money was used here.

Over the past two years a lot of meteorological data has been secured. I have engaged the services of a retired professor at Maunaolu College to analyse this data. While it has nothing to do with radio astronomy, I am of the opinion that if data is worth taking it is worth organizing to see what has been caught. The results should be of scientific interest as no long run of data has ever been taken before at such a high altitude over the central pacific ocean. A couple of scientific papers will be forthcoming eventually on this subject. So far, I have written four subsidiary papers. When reprints are available, I will sent copies to you. I believe it best to hold back the radio astronomy results until a complete picture can be secured. Also I want to consult with the Australians and compare our findings.

As you probably guessed, now that I am beginning to understand the phenomena available here at Kole Kole, I am beginning to lose interest in the situation and am anxious to get on with the next experiment.

Aloha,

Grote Reber