

August 16th, 1954

Dear Schuyler:

This is an addenda to my letter of the 4th. I expect to be in Sydney for about two weeks after the arrival of the Orion. Presently I have a reservation at the Wentworth Hotel Limited (no street address given), Sydney, Australia. I will be working under the auspices of the

Ionosphere Prediction Service
5 Hickson Road
Millers Point, New South Wales, Australia

and can be reached either there or at the hotel. Millers Point is a postal district of Sydney. The air mail service is really good to here as I frequently get letters in as little as three days so less than a week should be needed to Wheaton. I won't be so far away after all! In Hobart I don't have any address yet. However I will be working at the field station of the

Ionosphere Prediction Service
G.P.O., Box 801 H
Hobart, Tasmania, Australia

and can be reached either there or via general delivery at Hobart.

The box of magazines arrived here OK. Thanks muchly. I have decided to have all my periodicals readdressed to Hobart as they don't do me much good in Wheaton. Thus you shouldn't be bothered by this matter much longer. I gather that there are still some advertisements, bank notices, etc. You might gather all these up and put them in a strong large envelope and send them out here. I'll need the bank notices to find out where I stand when it is income tax time. With all your other worries, I think it probably is simpler for the bank to take care of all my affairs if they will do so. I intend to write to them on this matter soon. There is a wooden box in the basement about two feet long, a foot wide and a foot and a half high which has a lot of paper work in it. I would like it sent out here, so please have Jess call the express office and have them come and get it. It should be addressed to me at Kahului, Maui, T.H. as that is where they have their office. After standing a long time in the basement the bottom may be in poor shape. Please examine it closely and if necessary have some steel bands put on so that the contents will all arrive here without falling out.

This adventure here is just about wound up. A lot of good experience has been secured and some interesting discoveries have been made. However it is now clearly evident that the tropics are not as favorable a place to do radio astronomy as the temperate regions. The exact cause is unknown but is in some way associated with a much greater depth and turbulence of the earth's atmosphere at low latitude. The outer parts of the earth's atmosphere must be greatly extended in the form of a thick disk which perhaps is not too surprising in view of the ring system of Saturn. In the case of the earth this material is gaseous. Radiations from the Sun cook it up during the day and cause great obscuration and absorption. Thus the best time of day to make observations is from about 2am to 6am. After sunset the ionosphere quiets down and by midnight conditions are usable again.

In some ways this is quite spectacular. Presently a given source in Cygnus sets about 6am. It is possible to go up to Kala Kala practically any morning and expect to get good results. The same source ~~sets~~ about 4pm. It is equally possible to go up to Kala Kala at this time of day and get nothing. At least 99% of the celestial energy is soaked up by late afternoon. Likewise there is a strong azimuth effect. Hawaii seems to be located at the edge of this absorbing belt. Looking out toward the north apparently one looks toward a region of relatively thin atmosphere and results are fairly good in the morning. Looking out toward the south one looks thru a great distance of this absorbing belt. In spite of considerable effort, nothing significant has ever been obtained on any of the strong southern sources reported by the Australians. As you can see from the above little dribbles of results can be secured at favorable times in favorable directions. However the overall results are not commensurate with the effort. Thus there will always be some good results to be obtained no matter how long the station is operated but it seems much more profitable to put the time and effort on something else. This is one reason I am so anxious to make the trip to Australia. There is the leading group of people in the field of Radio Astronomy in the entire world. It is unfortunate that this field of endeavour never caught on in America. However it seems silly to beat one's brains out in an environment not conducive to the subject when a better environment can be found at another place.

I hope that you are successful on moving the house as I believe it will be the best and most economical way of securing an improved living quarters. The same things in a general sort of way prompt you to wish to make this move as prompt me to wish to visit Australia.

In case Jean forgets how to iron a shirt, I am enclosing a small pamphlet, just in case!

It has just occurred to me that your birthday is the 20th. Please accept my congratulations. I hope that with your business now getting on its feet, this and your many future birthdays will all be very happy ones and that the great strain of the past few years will soon be forgotten. I haven't been down in the valley for about ten days. However this week I will pick out a sparkling Hawaiian tie which should arrive shortly.

Please remember me to Jean and all the small fry. Especially thank her for the long newsy letter. It may be another year before I get back to Illinois. In any case it is only a week by mail.

Aloha,

Grote

Grote Reber

P.S. That 50¢ bank balance is an interesting example of what I meet with here every day. When I closed that account I had a long discussion with the dummy ~~behind~~ the window about the monthly charges etc. Apparently when somebody higher up computed the balance, it turned out that I was right and that there was 50¢ more in it just as I contended. Again I knew more about their business than they did!

G.R.