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NATIONAL RADIO ASTRONOMY OBSERVATORY
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GREEN BANK, WEST VIRGINIA

BUSINESS OFFICE
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LABORATORY
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December 12, 1961

Dr. J. L. Pawsey
21 Derby St.
Vaucluse, N.S.W.
Australia

Dear Joe,

I was pleased to get your letter and very glad indeed to know that you will be willing to be our next Director. You can be sure of a very real welcome as soon as you can get here, and until that happens, we will all help you in any way we can.

Your question on the 300-foot is, of course, one we have worried about and considered carefully. Mainly, as you say, it is a bolted structure. Some parts are riveted -- this was done only where the rivets could be put in in the fabrication shop.

Two types of bolts are used. The first is high tensile(HT) bolts. These are the kind which pull the two surfaces together so tightly that the friction forces developed will prevent slip. Such bolts are used very largely in the 300-foot -- in all connections of the main members of the structure. The secondary members are bolted with ordinary machine bolts.

We believe this method of construction will be satisfactory because of our very good experience with the 85-foot telescope. That also is a bolted structure, which uses structural rib bolts, not HT bolts, in the steel connections. The structural design of its dish is basically similar to the 300-foot. The work by Drake on positions has shown the structure bends, but <u>does not slip</u>. This work shows the structure coming back to position after movement of the dish without hysteresis to accuracies measured in a few thousandths of an inch at the edge of the dish. Of course, effects of temperature and wind must be avoided before it behaves this well. On this basis, we felt it justified to use the bolting method I have described for the 300-foot.

The steel structure is now complete, and we shall soon be starting on measuring it to receive the surface. As soon as we get some measurements, particularly as soon as we can move it to test its deflection and the reproducibility, we will know how well we have done. We will keep you in touch with what goes on.

Congratulations on the 210-foot, particularly on the possibility of 10-cm behavior. It looks wonderful.

With my best wishes,

Sincerely yours,

John W. Findlay

JWF/pdj

cc: D.S.Heeschen