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Subj: 300-ft Meeting

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I am very sorry that I will miss the Green Bank meeting. I hope that both new ideas and enthusiasm for another dish will come out of the meeting, so that much of what I now send to you will be irrelevant.

The documents now being circulated offer a choice between a high frequency dish that is smaller than 300 ft and a less precise dish of order 300 ft. Much of the impetus for the "70-m" class telescope arose as a replacement for the 140 ft, and indeed it would serve admirably in that role. It is not especially well-suited to the site; it would be much more effective during its high frequency operations were it located at a higher, drier, more cloud-free site. However, apart from its role in the space VLB work, it is not in my view such a major step forward in the opportunities it offers for scientific research that the high cost is justified.

Of course, replacing the 140 ft is now not the problem. I believe that with the loss of the 300 ft research at centimeter and decimeter wavelengths has been seriously set back, as I am sure will be emphasized in Green Bank. What then seems to be needed is a powerful centimeter wavelength dish that can build upon the work of the 300 ft. This requires in my opinion a telescope of comparable power, not one that is significantly smaller. Thus I endorse as a concept the BFD of Lockman, because it has the potential of being a major research tool in the fields of galactic HI, extragalactic HI, and pulsars. It might also be useful in galactic continuum, depending on its polarization characteristics, but that field is relatively less important. I think that such an instrument would have a long research life. I note in passing that a telescope on this kind is extremely well-matched to the Green Bank site, because of the radio quiet zone.

The problem with all of this is that no design exists for the instrument. I do not know what the external forces are, and how they will affect the decision-making process. I hope that we will have enough time to forge a reasonable consensus about the scientific need for a new telescope, and time to do a reasonable design effort on something like the BFD. Perhaps there are ways to be innovative and clever with it, rather than just going down the same old path.