



Department of Energy, Mines and Resources
Ministère de l'Énergie, des Mines et des Ressources

*Dominion Radio Astrophysical Observatory
Observatoire fédéral de radioastronomie
P.O. Box 248, Penticton, B.C.*

*File Number
N° à rappeler*

July 7th 1969

Prof D.Wills,
c/o 5 Grange Park,
Frenchay,
BRISTOL,
England.

Dear Derek,

Your letter of 25 June has just caught up with me. My present timetable for the rest of the summer is:

Now to Aug.6 - here
Aug 6 to Aug 28 - Green Bank
Aug 28 to Sep 2 - back here
Sep 2 to Sep N - drive truck across Canada
Sep N onwards - Queen's

Greatly I would look forward to spending some time with you again, but it looks as though our joint globe-trottings are presently incommensurable.

As you heard/guessed, I am here for the while, doing some low-frequency things. Things include setting up test equipment for our proposed huge huge 12.5 MHz array in the Alberta Rockies, writing spectrum papers with Rob Roger, and an anti-Braude paper with Jim Caswell. Carman Costain and I are also into Year Two of the Great Cluster of Galaxies Paper, which gets fatter and fatter by the year but no nearer publication. Most of the data in Year One have now been improved or eradicated out of existence, so it is not clear how long the process will continue. Basically the effect I have always been claiming is still there, although we now believe it over a much wider range of frequencies.

I hope you had a good time at Parkes, it sounds like a very enjoyable thing to have done. I look forward with trepidation to Vol. N of Wills' Compleat Identifications of the Universe which has resulted.

Mary and I drove our truck across from Kingston in May, after a month at Green Bank which was very enjoyable. Since then we have been camping by a big lake just 8 miles south of Penticton while I work at DRAO, apart from our sortie into the Rockies to build a scintillation interferometer at 12.5 MHz. The weather is typical Okanagan, sunny and hot, and the 3-month camping effort is going very well. We have





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battles with skunks in our garbage and frogs in our bathroom but it is the wide wide open spaces....

These days I don't know what frequency range I'm supposed to be in, although I have yet to get into the optical world. I am presently involved in the 10 and 22 MHz work here (last sunspot minimum, writing papers), and 12.5 MHz on the new site (next sunspot minimum, erecting cattle fences), 21 cm line (Green Bank 300 ft, absorption on bright sources), 21 cm continuum (Green Bank 300 ft, doing a survey with Mike Davis), 3.2, 6.6 and 10.6 GHz (ARO 150 ft, source spectra etc.). At least I can't claim to be under-worked or lacking instruments to waste the time of. I hope a proportionate number of useful results will emerge over the next few years. Sometimes I feel I should stop observing for about 5 years and make sure it all gets written up.

Long-term we would like to move West, and the present Rocky Mountain Institute of Advanced Radio Astronomy, equipment four 12.5 MHz dipoles, ambitions unlimited, looks the most likely prospect. At present it consists of yours truly with the moral and some financial support of DRAO, and the lunatic fringe of the Dept. of Electrical Engineering at the University of Alberta in Edmonton. The grand design is for a 12.5 MHz instrument capable of 20-30 min arc resolution. We have a site and we have done a winter of interference monitoring, this winter is the ionospheric scintillation experiment which should Tell All about that part of the world as a potential observatory site. The place in mind is in the Eastern slopes of the Rockies, 4400 feet up in the flats of a big river which later flows on out into the North Saskatchewan. If the ionosphere looks good, all we need is \$1,000,000 and we are away. As an LBI experiment between Penticton 22 MHz and ARO with a 22 MHz feed in the 150 foot successfully saw fringes (from Jupiter) last winter, we are very hopeful that Cambridge ionospheric mythology is wrong and that big low-frequency antennas will work, at least enough of the time to be able to get the 3000 sources or so the antenna should be able to detect in principle.

In the meanwhile I am fostering connections with Green Bank as it is a fun place to work. Queen's is fortunately a very central place to be for getting around in this way.

I hope we will be able to get together on this or the other continent some time foreseeable hence. What are your plans for Christmas? Providing W.E. Howard III doesn't schedule me at almost no notice for N weeks of dish time, I



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am hoping to have some time away from radio astronomy for a week or so. Any chance we could invite you to the frozen North for Christmas dinner ?

If you decide to visit Kingston anyway, people there in Physics are Vic Hughes and Mike Kesteven (radio astronomers) and Dick Henriksen (theoretician). Mike is one of Mills' prodigies and would no doubt be entertained to hear any recent gossip from Australia. He is living in 95 Wellington Street now and could likely let you in to our apartment if you would like somewhere to stay over. We share the same very friendly landlord now, so do take advantage of remote hospitality from us even if we cannot be there to offer it in person.

Chris Purton got married again this June and was last heard from on honeymoon in Turkey.

Jim and Annie are summering here, and Annie will be a mother early next month.

Jim Caswell is hoping to go to Green Bank next year - probably we will write the Great 10 MHz Background Story in the equatorially mounted shadow of the 140 foot.

All the best to your folks,
Hope we will see you some time,
Cheers,

