

1st July 1980

Dear Dr. Harwit:

Your letter of 16/4/80 arrived on 28th. The manuscript posted same day arrived on 17/680 I've found it interesting and informative. A discovery requires four things. The rite man working on rite thing at rite place at rite time. Jansky is an excellent example. Had he been a few years earlier or later the ionosphere would have been opaque and discovery of celestial radio waves missed. These four conditions cannot be created by committee. They can be secured by chance. The more tries, the greater the chance. More tries requires more money for little ventures. Most will fail and money appear wasted. The few successes will more than compensate.

I've criticised the national laboratories. Their defenders jump overboard and charge I want to abolish them. Not so. I merely want to cut them down to size. I've visited the establishment at Batavia, Illinois. To me, it is the ultimate in vast outlay for trivial results; like the British Colonial Office which reached an absurd peak just as Empire was disbanded.

The national laboratories act like a mortgage which must be serviced first. Anything left over is tossed to the small researcher. I think NSF astronomy budget should be limited to a half, or perhaps a third for national laboratories. The major part of money should go to a vast array of small investigators. NSF will be against this because it is easier to give away money in large blocks than in small pebbles. I have a page long Letter to Editor in SCIENCE on this subject about 1964 or 5. You can find it via the index.

Currently, I think we are rapidly coming to end of era about relativistic cosmology and expanding universe. We must find something better.

Best wishes

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