

PROF. T. CASPERSSON

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May 1st 1961

Dear Joshua:

At last I am back in Stockholm to stay there. I have been doing some thinking about an UMSP for very small objects, stimulated by our talks, your telephone call and to some extent annoyance over the new Russian "first".

Enclosed I send a very crude plan for a possible way to try. If one really wants to get at particles of bacteria-size I feel one should carry a line incorporating refocusing at each wavelength and that is the central thing in the plan. It would be much nicer if one could work with truly achromatic lenses and thus work without refocusing - however I believe all existing lenses are not perfect enough for that and the chance for a new lens within a few years is very slight indeed because of the enormous work needed for such a development, involving new lens materials and cements.

With this I mean that one should try to explore the existing lenses as far as possible - that is a thing we can do and have started doing. In addition to that however I feel it advisable to work on a refocusing system at the same time - because of the time limit.

The enclosed plan is very crude and also the language is not good. However, not knowing the extent of your interest I feel it might be permissible to send it in its present shape. Furthermore I expect Dr Loevinthal will come here next week.

It would be nice to have a clear understanding about what you would like us to do. At present I gather that we should take absorption spectra of different types of objects as discussed in Stanford and we are now to wait for some objects from you. In addition to that we should find out how well achromatized the existing

lenses are. We have just started to work with the 1.25 Zeiss lens - but have no great expectations about ~~the~~ its achromatism below 2600 Å. v

This work is not very inspiring and involves fairly much technical work. It can be carried for a year with the organization we spoke of, of an half-time young academic assistant herefor which we have, as you know got about 2500 dollars from the Swed Nat. Sc. Research Council - plus measuring work by a highly qualified technician. To some extent the latter can be made in our routine line. If the work has to be more productive 1/2 to 1 person should be put on that, what would mean 2500 - 5.500 dollars extra for a year, as I told you when you asked in Stanford.

Of the plan enclosed we would only be willing to do the spade work - finding out what is feasible and the basic arrangements *for buying* on "Oscillating focusing" etc. That would include some work in workshop and some purchases amounting to perhaps an additional 2 000 dollars. The physicists here would be glad to collaborate (in my institute) without any extra arrangements outside what could get into the budget mentioned above.

You have to tell if you are interested and in which way. Else we do not do anything. It would be easy for me to find the money here, but I understand that you are not very enthusiastic about the then unavoidable opportunity for the press to see all papers and make private comments and speculations without asking me - the way they have already done once. If you should be interested in furnishing some funds at some time I should also point out that if they are given as a ~~grant~~ ^(SPÖELZE) to the institute ~~xxxxxxx~~ for a piece of work I have to ask permission at the Department of Education to receive it and then again the whole thing passes through a press office where anyone can read anything.

If the grant were yours and we made agreement that ~~for~~ a lump sum, for which I am responsible, would cover the costs for ~~the~~ work here in Sweden, which we had agreed upon - then I cannot see that it would be necessary for me to ~~xxxxxxx~~

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ask for special permission and then it would only be a thing between the two of us.

All this just to clarify the points about our official procedures and the relations to the press - we have, I am sorry to say - very few responsible science reporters in Sweden.

With best personal regards
I am yours

A handwritten signature in cursive script, appearing to read 'Torbjörn', written in black ink.