

November 10, 1960

Dr. Melvin Calvin
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Dear Mel:

I have your note asking about some of Carl Sagan's manuscripts. I have recently returned all this material directly to him. We were not sure how this material ought to be handled. Carl, himself, seems agreeable that it might be readily published through the usual channels - journal or book publication - and the Space Science Board has encouraged the use of such channels for specific monographs whenever possible. You may have good reasons to pursue a different course, and you should be able to consult with him about it quite conveniently. I certainly think the stuff should be published.

Your secretary told me on the phone that you would be away for some time. I had wanted to discuss the standing of the biological experiment on the NERV vehicle. The radiation microbiology, as far as Norman Horowitz and I can piece it out between us, might warrant a more critical review than it evidently had before the Biosciences Committee was set up. Norm implied that you would concur with this. I would only add that I think that it is very important to insist on the highest standards for NASA-sponsored experiments: there is more at stake than making the best use of assigned space on a specific vehicle; there is also the general reputation of space work in basic biology which NASA will have to work hard at. You should be able to do a great deal for this through your influence on the Biosciences Advisory group.

I was not clear in my own mind what the schedule for NERV was; if this is the package that was flown in September then, of course, it is all spilt milk.

When the time and energy for it happen to coincide, I will try to get out some minutes on our last Exobiology Committee meeting. We spent a good part of our time discussing what might be done in a hurry for a possible Mars 1964 mission and I think some rather challenging ideas came out of it, in particular the thought of using a lander consisting of a balloon that could graze the surface and then reach considerable altitude, perhaps through a few cycles. This would give a way of sampling the surface and also of photographing a wider variety of terrain both close up and from a distance than might be

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possible with either a fixed lander or a higher flying balloon. The JPL crowd is looking closely at the feasibility of this and it will come up again in a Planetary Committee meeting soon. The duration of effective contact between the capsule and the passing rocket, which would be a relay station, is so short - perhaps a few hours - that culture experiments seem rather dubious at this point but we may have to wait until better designed data are available. On the other hand, there may still be good reason to put on a microscope objective to look at raw dust as one of the set of photographs that might be sent during an early interval of a broad channel.

Yours sincerely,

Joshua Lederberg
Professor of Genetics

see of 1st paragraph to Sagan.