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June 9, 1969

Dr. Thomas O. Paine
Administrator
National Aeronautics and Space Administration
Washington, D. C. 20546

Dear Dr. Paine:

The issue of back-contamination of the earth by a lunar return sample was discussed at the last meeting of OSSA's Planetary Biology Subcommittee, of which I am a member. I would like to take this occasion to clarify my position on this matter.

In my view the design of a system to control lunar back-contamination has an important purpose. It tests a system against the lowest risk return sample mission and provides some degree of protection for this type mission. Since the possible losses are so large a significant effort is worthwhile even though the risks are admittedly very low. What was being criticized at our subcommittee meeting was the failure to make incremental efforts that would achieve a large increase in system reliability.

The investment in this system has been clearly worth the cost provided we extract everything of value that can be learned from this experience. There is no other way in which we could have come to appreciate the real difficulties in creating a system capable of managing back-contamination for missions of higher risk such as Mars. The most important fact that has been demonstrated is that protocols for protection against back-contamination depend, for their effectiveness, on a significant, widespread, and well-founded belief in the risks involved. This puts a requirement on thorough biological reconnaissance and in situ analysis before planning return sample or manned planetary missions that may have a higher a priori risk than the lunar missions. These views are given more completely in the enclosed paper (particularly the conclusions) given at the 1967 London COSPAR meeting.

Very truly yours,

Elliott Levinthal

ECL/mla

bcc: R. Young

J. Lederberg ✓