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AIR FORCE CAMBRIDGE RESEARCH LABORATORIES
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AIR FORCE RESEARCH DIVISION (ARDC)
UNITED STATES AIR FORCE
LAURENCE G. HANSCOM FIELD BEDFORD, MASSACHUSETTS

REPLY TO ATTN OF: CRZCI/J.S. Garing/2506 lu

12 August 1960

SUBJECT: 3.5 Micron Region.

TO:
Professor Joshua Lederberg
Department of Genetics
Stanford University Medical Center
Palo Alto, California

Dear Professor Lederberg:

1. Your letter was very interesting and I am in agreement that any research efforts should be concentrated in the 3.5 micron spectral region. I am sending under separate cover the Atlas of the atmospheric absorption spectrum that we discussed as well as the second part of the same study which contains some laboratory spectra of various atmospheric molecules and their wavelength positions. You could perhaps show the Atlas to Dr. Calvin and if he is interested, I will be happy to send him a copy. Unfortunately, no more copies of the revised edition of the Handbook of Geophysics are available from here so it will be necessary for you to obtain one through the publisher, MacMillan Company. I wrote a note to Dr. Shaw at Ohio State University asking him to send you copies of his surveys on Atmospheric Radiation, Venus and Mars.

2. The general feeling is that it would not be a practical idea to attempt to obtain the type data needed in the 3.5 μ spectral region within the scope of any present and potential balloon or aircraft programs. The present balloon programs for measuring flux divergence (radiation backgrounds) do not have sufficient funds. The plans for future programs are so uncertain that there is no assurance that these experiments and the other background studies can be combined. Dr. Gast and I will submit a suggested balloon program to General Flickinger through Major Brennan for their consideration. For planning purposes we will assume a need for 0.1 micron resolution unless Dr. Calvin's results indicate otherwise. The program insofar as possible would make use of available equipment and contractors and initially would probably fly from

an area where vegetated, arid and water terrains are available.

3. Before we go too much farther in our thinking, I would like to know more about Mr. Davies' efforts at J.P.L. What equipment is he building and particularly how does he plan to check it out - in the laboratory, on aircraft or balloons or in a geocentric satellite and how far along is he?

4. Again I would like to invite you, Dr. Calvin and Mr. Davies when you are again in the East to please drop up this way and see us. By then we may have more concrete plans for discussion. In the meantime we will look forward to any laboratory results Dr. Calvin may wish to send us.

Yours sincerely,

John S. Garing

JOHN S. GARING
Infrared Techniques Branch
Thermal Radiation Laboratory
Geophysics Research Directorate

cc: Dr. Calvin
General Flickinger
Major Brennan
Dr. Gast