

May 22, 1961

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Dear Gerry:

EARLY  
We are fast approaching the need for digitizing video information at a fairly <sup>1</sup>stage of our work on the fast scanning microspectrophotometer. This requirement partly stems from the limitations of storage tubes which are much more linear and reliable for digitals than for analogue information. In any case it seemed to me that the final output signal would almost certainly be coded for telemetry.

What I am now writing to ask for is information on the techniques of digital coding as envisaged for the Mariner B telemetry. The particular points I am concerned about is the intended circuitry for the initial conversion of video analogue to digital representation.

As a possibly related question, can you dig up a description of the Tyros video system, which, I should suppose, could give us some good leads on a workable video telemetry.

Bell Labs published a paper on digital television in the Proceedings of the IRE about two years ago, but I would suppose that their system is too complex for space craft application and is a better match to the band width requirements of commercial television.

Yours sincerely,

Joshua Lederberg  
Professor of Genetics

NEUGEBAUER, G.