The University of Chicago
CHICAGO 37, ILLINOIS
Institute of Radiobiology and Biophysics

1/24/50

Dear Josh,

Yes, Hogness had shown me your letter. He took it with puzzlement. It is hard for him to understand these other values.

We regret very much that you are not coming, but are nevertheless grateful that you are in Madison and not a thousand miles away.

Fiona was here last week-end. We talked of holding the next meeting the week-end of Feb 12. I will send you a formal notice in a few days. Both L. and Szilard felt that the meetings this year have not come up to last year's standards. They want to decrease what formalities there are — try to arrange more time for bull sessions and thinking. Also they'd like to lessen the number of subjects covered at one meeting. Presumably, at the next meeting we might discuss thoroughly some of L's recent expts. He has been studying phage growth by following nucleic acid synthesis, and seems to be getting some interesting results.

I am very interested in your irradiations of the diploid and would like to hear a lot more about it. But let me tell you about our irradiation techniques.

As a rule we irradiate resting cell suspensions in saline. We obtain the "resting" cells by taking growing culture at 10° centrifuge, and resuspending in 1% saline. The suspension is then inoculated with

aeration at 37° for 16 hours. This cell suspension or a suitable dilution in saline is used. We irradiate 30cc in a 15 cm petri dish, shaking the dish with a rotary motion. We try to use the lags at a density of about 2×10^7 per cc. At this concentration the absorption of the thickness suspension is small, and we don't have to be too concerned about self-shielding, etc. This of course then gives reproducible curves independent of 100% differences in initial density. Results are arbitrarily standardized at initial density of 10^8/cc.

We use a 15 watt GE germicidal lamp for the UV. At 50 cm above the suspension. We run the lamp for at least ½ hr before using it so that it is fairly stable. Luria advises running a new lamp for ~ 100 hours before using for best results.

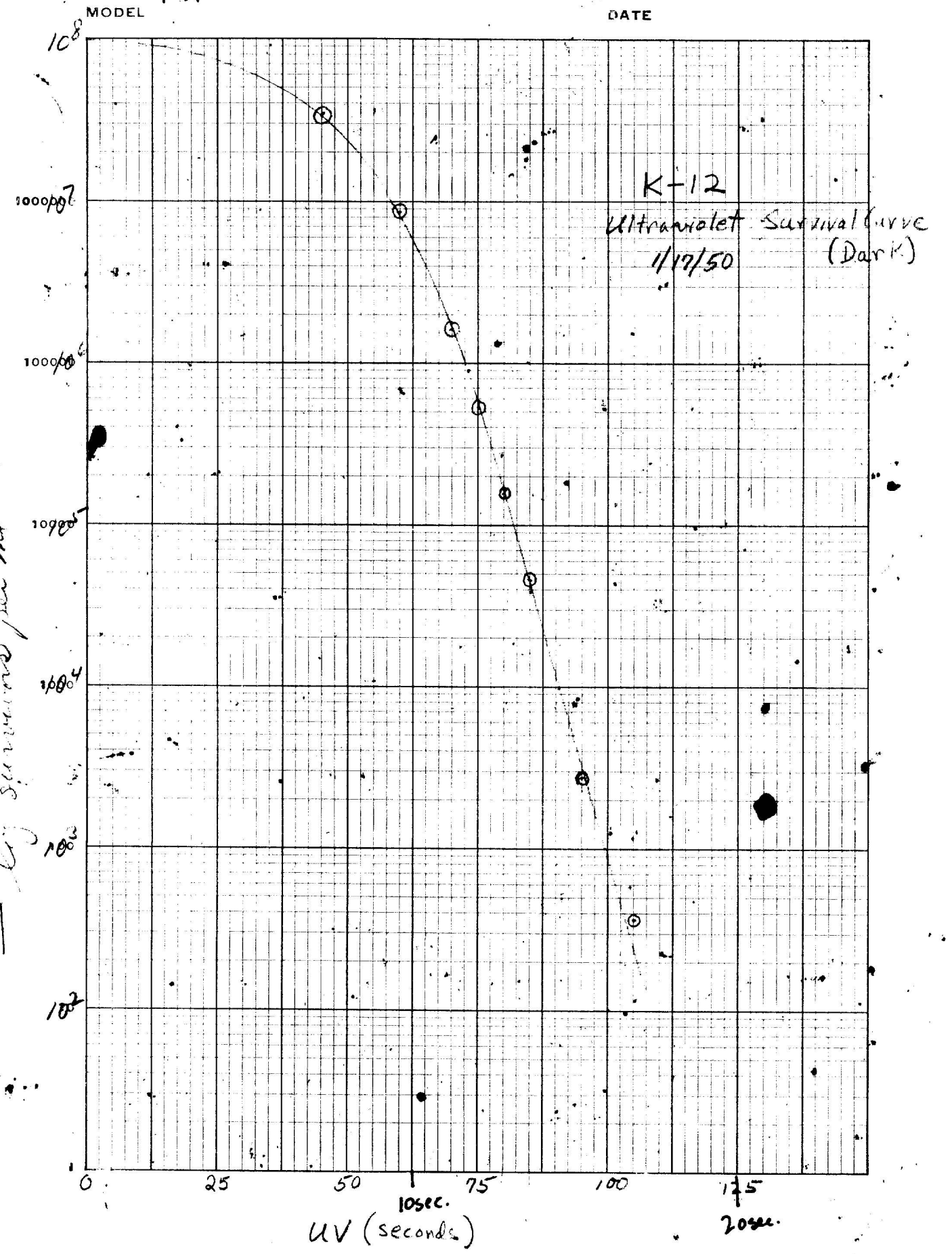
I enclose a recent curve obtained on K-12. There is no significant difference between it and the curves for W and its progenitors, and 58-161.

I can send you some data on the photoreactivation if you like. I still don't understand my difficulties there.

By the way, are there K-12 mutants requiring ornithine, citrulline, or arginine?

We also enjoyed the New Year's weekend with you, and hope we can see you again independent of a meeting.

Aaron


MODEL
DATE
K-12
Ultraviolet Survival Curve
11/17/50
(Dark)
Log Survivors / ml
10^8
10^7
10^6
10^5
10^4
10^3
10^2
0
25
50
75
100
125
10sec.
20sec.
UV (seconds)
GE Germicidal lamp (15 watts) at 50cm