St John's College
Cambridge.

Oct 21. 1928??

Dear Fisher,

Do you know whether anybody has done a problem of the following type ? Three observers, Gutenberg, Conrad and me to be precise, make studies of the times of arrival of six waves observed in near earthquakes. Each, as it happens, has studied two earthquakes. After fitting linear functions of the distance the sets of residuals give 20 or so standard errors (some pulses not being read in some of the studies.) In the separate cases the number of observations available to find a range from 5 to 15, and there is reason to suppose that most of the variations found between cases that ought to be comparable represents only accidental agreement or disagreement. The question is, can the data be combined in any way to give better estimates ? It would be reasonable to suppose that the standard error in any study is of the form aA, where a is a constant for the observer (who is incidentally strongly correlated with instrumental type) and A a constant for the wave. Possibly another factor is needed since all earthquakes don't give equally clear readings. I have played about with it a bit but can't see any method that should be both reasonably efficient and capable of being worked out in a finite time. It's not urgent but keeps coming back to me.

Yours ever

Harold Jeffreys