

Brussels 6 December 1946
Général Henry de Braeckeleer

Dear Professor Krishnan,

I have received your text of a note to Nature and your letter asking some comment about it.

I think there is a misunderstanding about the meaning of r in Hubble and Tolman formula $\frac{\Delta\lambda}{\lambda} = kr + l/r$. This r is the distance actually occupied by the nebula and not the distance at the time of emission of light. This is perfectly clear from the original papers Ap. J. 84-1936 note of page 477 and Ap. J. 82-1935 page 396.

I should like to call your attention also on the paper of J. L. Greenstein - Ap. J. 88-1938 - p. 605-19 on "The temperatures of the extragalactic nebulae and the red shift correction"

In deducing his result Hubble assumes an effective temperature of 6000 degrees while Greenstein finds from a study of spectral energy distribution a black body temperature of 4200. and points out that with this value, the dependence of red shift with distance is not linear in either of the two hypotheses assumed by Hubble. This would essentially alter the relation you have pointed out between k and l .

I hope you have a pleasant trip back to England.

And I am yours sincerely

Greenstein