An Infinite Non-Expanding Universe in Dynamic Equilibrium

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The following is the abstract of a paper Dr. Waldron was to have delivered at the APEIRON Workshop in June of 1990. Dr. Waldron passed away in May of last year, one month before the Workshop. No more detailed treatment of the subject has yet been found among Dr. Waldron's papers.

Any model of the universe must accommodate two features; it must account for the redshift and it must give an answer to Olbers's paradox. The model of the photon that emerges from the ballistic theory of light does not permit an explanation of large red-shifts in terms of the Doppler effect, so we conclude that the universe is not expanding. Some other explanation of the redshift, and some other resolution of Olbers's paradox, are therefore required of the ballistic theory.

It is suggested that a photon may be unstable, and that over a long period of time (gigayears) it might lose mass according to an

exp(–*HT*) law, where *H* is Hubble's constant. This would give a red-shift, since the frequency of a photon is proportional to its mass. On this view, the universe must be infinitely large and infinitely old. A distribution of matter in the universe is suggested which obviates Olbers's paradox, and this distribution is in keeping with that required by the interpretation of the red-shift.

A picture of the universe emerges in which matter is being continuously redistributed, building up complex structures while simultaneously complex structures are breaking down, giving a generally uniform, though not homogeneous, appearance from one time to another and from one position to another.