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THERMOLUMINESCENCE AND THE K-Ar AGE OF METEORITES

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Normal TL dating of techniques fail with meteorites because of their great age. There is evidence in the literature of a correlation between TL sensitivity — the TL of a sample which has been drained of its natural TL and given a standard test dose — and K-Ar age, which suggests that the former can be used for dating. The effect on TL sensitivity of annealing, and of large doses of γ radiation, has been examined. The results suggest that the correlation is the result of certain meteorites having been annealed in space, since annealing lowers both TL sensitivity and K-Ar age. Except possibly for a region of the glow curve around 400 °C, it seems unlikely that TL sensitivity can be used for dating, but it may provide a means of determining the annealing temperature of reheated meteorites.