

Natural Thermoluminescence (NTL) Data for Antarctic Meteorites

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The measurement and data reduction methods were described by Hasan et al. (1987, Proc. 17th LPSC E703-E709; 1989, LPSC XX, 383-384). For meteorites whose TL lies between 5 and 100 krad the natural TL is related primarily to terrestrial history. Samples with NTL <5 krad have TL below that which can reasonably be ascribed to long terrestrial ages. Such meteorites have had their TL lowered by heating within the past million years or so (by close solar passage, shock heating, or atmospheric entry), exacerbated, in the case of certain achondrite classes, by "anomalous fading".

Sample	Class	NTL [krad at 250 deg. C]	Sample	Class	NTL [krad at 250 deg. C]
QUE 93001	MESO	2.2 ± 0.5	EET 90610	L6	8.4 ± 0.1
QUE 93011	H4	64.2 ± 0.7	EET 92051	L6	30 ± 2
QUE 93012	H6	31.2 ± 0.5	EET 92055	L6	50.8 ± 0.7
ALH 90405	L4	5.5 ± 0.1	EET 92059	L6	52.8 ± 0.8
			RKP 92407	L6	33.5 ± 0.2
			RKP 92408	L6	89 ± 2
			ALH 90401	LL6	17.7 ± 0.1

The quoted uncertainties are the standard deviations shown by replicate measurements of a single aliquot.

COMMENTS: The following comments are based on natural TL data, TL sensitivity, the shape of the induced TL glow curve, classifications, and JSC and Arkansas group sample descriptions.

EET92051 (L6) may be shocked.

1. TL data do not confirm pairing suggested in the Newsletter:

MESO: QUE93001 with QUE86900 group (AMN 17:3).

2. Additional Pairings suggested by TL data:

H6: QUE93012 with QUE90223 (AMN: 16:1)

L6: EET90610 is possibly paired with the EET87587 group (JGR 99, 2073-2085)

L6: EET92059 with EET92055 and possibly with EET87759 (JGR 99, 2073-2085).