

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 be reasonably 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. We suggest that meteorites with NTL >100 krad are candidates for unusual orbital/thermal histories (Benoit and Sears, 1993, EPSL 120, 463-471).

Sample	Class	NTL [krad at 250 deg. C]	Sample	Class	NTL [krad at 250 deg. C]
QUE93030	H3	66.8 +- 0.6	QUE93041	L5	3.1 +- 0.1
QUE93024	H5	48.2 +- 0.5	QUE93042	L5	8.8 +- 0.1
QUE93027	H5	0.34 +- 0.04	QUE93044	L5	8.8 +- 0.1
QUE93028	H5	1 +- 0.1	QUE93045	L5	33 +- 2
QUE93029	H5	27.5 +- 0.1	QUE93052	L5	14.8 +- 0.2
QUE93033	H5	24.3 +- 0.1	QUE93053	L5	2.8 +- 0.4
QUE93034	H5	0.9 +- 0.1	QUE93054	L5	0.7 +- 0.1
QUE93038	H5	53 +- 0.3	QUE93056	L5	15.5 +- 0.1
QUE93043	H5	22.8 +- 0.1	QUE93057	L5	8.3 +- 0.1
QUE93046	H5	107.1 +- 0.1	QUE93058	L5	9.7 +- 0.1
QUE93049	H5	22.9 +- 0.1	QUE93059	L5	9.6 +- 0.1
QUE93051	H5	1.9 +- 0.3	QUE93061	L5	10.3 +- 0.1
QUE93055	H5	5.1 +- 0.1	QUE93062	L5	1.9 +- 0.2
QUE93031	L5	8.1 +- 0.1	QUE93063	L5	8.7 +- 0.1
QUE93032	L5	2.1 +- 0.3	QUE93065	L5	2.7 +- 0.5
QUE93035	L5	12.6 +- 0.1	QUE93068	L5	5.2 +- 0.2
QUE93036	L5	9.9 +- 0.5	QUE93072	L5	1.6 +- 0.3
QUE93037	L5	0.5 +- 0.1	QUE93076	L5	12.2 +- 0.1
QUE93039	L5	10.3 +- 0.2	QUE93016	L6	30.9 +- 0.3
QUE93040	L5	13.4 +- 0.1	RKP92407	L6	33.5 +- 0.2
			RKP92408	L6	89 +- 2

The quoted uncertainties are the standard deviation 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 glow curve, classifications, and JSC and Arkansas group sample descriptions.

QUE93030 is confirmed as a type 3.6 (AMN 18:1).

1. Pairings (Confirmations of pairings in AMN 18(1):

H5: QUE93043, QUE93049 and possibly QUE93029.

Benoit P.H., Roth J. and Sears D. (1995c) Natural thermoluminescence (NTL) data for antarctic meteorites. *Antarctic Meteorite Newsletter* **18(2)**, 22-23. Johnson Space Center, Houston TX.

L5: QUE93032, QUE93037, QUE93041, QUE93053, QUE93062 and possibly QUE93054 and QUE93065 with QUE90205 group (AMN15:2).

L5: QUE93031, QUE93035, QUE93036, QUE93039, QUE93040, QUE93042, QUE93044, QUE93052, QUE93056, QUE93058, QUE93059, QUE93061 and QUE93076 with QUE90207 group (AMN15:2).

L5: QUE93057 and QUE93063 with QUE90202 (AMN 15:2).

2. TL data do not confirm pairings suggested in the Newsletter:

H5: QUE93038 with QUE93043 group (AMN 18:1).

L5: QUE93045 with QUE90201 group (AMN 18:1).

L5: QUE90218 and QUE90239 with QUE90201 group (AMN 15:1 and 15:2).

3. Additional pairings suggested by TL data:

H5: QUE93051 with QUE93028.

H5: QUE93033 with QUE93043 group.

L5: QUE90218, QUE90239, and QUE93045.