Benoit P.H., Roth J., Sears H. and Sears D. (1993e) Natural thermoluminescence (NTL) data for antarctic meteorites. *Antarctic Meteorite Newsletter* **16(1)**, 21. Johnson Space Center, Houston TX.

NATURAL THERMOLUMINESCENCE (NTL) DATA FOR ANTARCTIC METEORITES

Paul Benoit, Joyce Roth, Hazel Sears, and Derek Sears
Cosmochemistry Group
Dept. Chemistry and Biochemistry
University of Arkansas
Fayetteville, AR 72701 USA

The measurement and data reduction methods were described by Hasan et al. (1987, Proc. 17th LPSC, E703-E709; LPSC XX, 383-384). For meteorites whose NTL lies between 5 and 100 krad, the natural TL is related primarily to terrestrial age. 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 last million years or so (by close solar passage or shock heating). We suggest that meteorites with NTL >100 krad are candidates for an unusual history involving high radiation doses and/or low temperatures (January, 1993 data set).

Sample	Class	NTL [krad at 250 deg. C]	Sample	Class	NTL [krad at 250 deg. C]
EET90229	H5	73.4 +- 0.1	EET90362	L6	13.4 +- 0.1
EET90372	H5	237.0 +- 2	EET90364	L6	9.1 +- 0.1
			EET90366	L6	9.1 +- 0.1
EET90051	H6	31.0 +- 0.3	EET90367	L6	8.4 +- 0.1
EET90238	H6	58.8 +- 0.1	EET90377	L6	15.7 +- 0.1
QUE90223	H6	30.0 +- 0.1	EET90391	L6	22.3 +- 0.1
QUE90255	H6	42.2 +- 0.2	EET90394	L6	7.7 +- 0.1
			EET90414	L6	9.1 +- 0.1
EET90053	L6	7.1 +- 0.1	EET90441	L6	11.7 +- 0.1
EET90054	L6	0.3 +- 0.1	EET90443	L6	28.5 +- 0.1
EET90071	L6	32.6 +- 0.1	EET90454	L6	33.8 +- 0.1
EET90076	L6	10.0 +- 0.1	EET90455	L6	6.6 +- 0.1
EET90115	L6	7.3 +- 0.1	EET90457	L6	14.8 +- 0.5
EET90121	L6	15.4 +- 0.1	EET90458	L6	25.9 +- 0.1
EET90138	L6	35.7 +- 0.2	EET90459	L6	17.4 +- 0.1
EET90152	L6	17.1 +- 0.1	EET90465	L6	8.4 +- 0.1
EET90156	L6	27.3 +- 0.1	EET90466	L6	30.9 +- 0.2
EET90157	L6	10.7 +- 0.1	EET90468	L6	6.4 +- 0.1
EET90158	L6	19.8 +- 0.1	EET90470	L6	11.4 +- 0.1
EET90159	L6	33.4 +- 0.1	EET90471	L6	23.7 +- 0.1
EET90175	L6	9.1 +- 0.1	EET90472	L6	7.4 +- 0.1
EET90177	L6	37.8 +- 0.1	EET90477	L6	33.3 +- 0.1
EET90204	L6	33.1 +- 0.1	EET90479	L6	12.3 +- 0.5
EET90207	L6	7.2 +- 0.2	EET90483	L6	30.4 +- 0.1
EET90230	L6	26.6 +- 0.1	EET90487	L6	28.1 +- 0.1
EET90266	L6	34.2 +- 0.1	EET90488	L6	0.1 +- 0.1
EET90300	L6	10.5 +- 0.1	EET90490	L6	13.6 +- 0.1
EET90316	L6	8.1 +- 0.1	EET90491	L6	9.6 +- 0.1
EET90350	L6	19.5 +- 0.1	EET90492	L6	29.2 +- 0.1
EET90351	L6	57.6 +- 0.3	EET90493	L6	14.6 +- 0.1
EET90353	L6	33.0 +- 0.1	EET90494	L6	11.2 +- 0.1
EET90354	L6	7.4 +- 0.1	EET90496	L6	26.7 +- 0.1
EET90355	L6	32.6 +- 0.1	EET90498	L6	9.9 +- 0.1
EET90356	L6	32.3 +- 0.1	EET90499	L6	25.8 +- 0.1
EET90358	L6	7.1 +- 0.1	EET90500	L6	7.7 +- 0.1
EET90359	L6	12.9 +- 0.1	EET90504	L6	8.7 +- 0.1

Benoit P.H., Roth J., Sears H. and Sears D. (1993e) Natural thermoluminescence (NTL) data for antarctic meteorites. *Antarctic Meteorite Newsletter* **16(1)**, 21. Johnson Space Center, Houston TX.

Sample	Class	NTL [krad at 250 deg. C]	Sample	Class	NTL [krad at 250 deg. C]
EET90505	L6	13.9 +- 0.1	EET90619	L6	6.7 +- 0.1
EET90506	L6	9.5 +- 0.1	EET90645	L6	6.2 +- 0.1
EET90597	L6	27.8 +- 0.1			
EET90599	L6	7.4 +- 0.1	EET90452	LL6	32.5 +- 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.

1. Pairings (Confirmations of pairings suggested in AMN 15(2)):

   L6: EET90053, EET90358, EET90619.

   L6: EET90076, EET90115, EET90300, EET90316, EET90367, EET90455, EET90472, EET90498, EET90500, EET90504.

   L6: EET90207, EET90645.

   L6: EET90157, EET90175, EET90354, EET90364, EET90366, EET90394, EET90414, EET90465, EET90470, EET90491, EET90494, EET90506, EET90599 and possibly EET90362, EET90468 and EET90479.

   L6: EET90490, EET90505.

   L6: EET90152, EET90377,EET90459.

   L6: EET90156, EET90230, EET90499 and tentatively EET90477.

   L6: EET90071, EET90159, and possibly EET90177.

   L6: EET90204, EET90266, EET90353, EET90355, EET90443, EET90466, EET90483, EET90487, EET90597 and possibly EET90138.

   L6: EET90356, EET90454, EET90492.

   Pairing of the EET90076 with the EET90157 group and the EET90156 with the EET90204 group is possible.

2. TL data do not confirm pairing suggested in Newsletter:

   L6: EET90054, EET90121, EET90158, EET90350, EET90351, EET90359, EET90391, EET90441, EET90457, EET90458, EET90471, EET90488, EET90493, and EET90496 with EET90053 group (AMN 15(2)).