Benoit P., Sears H. and Sears D. (1991f) Natural thermoluminescence (NTL) data for antarctic meteorites. *Antarctic Meteorite Newsletter* **14(1)**, 15. Johnson Space Center, Houston.

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). This group of meteorites are not from the thermoluminescence survey but had their natural TL measured in the course of another project, which required measurement of multiple splits. These samples were treated in the same way as survey samples but were sent through the US mail and they were not handled in red light. However, the samples were taken from large well-documented meteorites and they were stored with the survey samples. 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". (February 1991 data set).

Sample	Class	NTL [krad at 250 deg. C]
ALHA77256 ,109	DIO	2 ± 2
,110		0.6 ± 0.1
sample mean		0.6 ± 0.1
ALHA84001 ,32	DIO	1.3 ± 0.1
EETA79002 ,83	DIO	4 ± 2
ALHA76005 ,78*	EUC	6 ± 2
,79		7.4 ± 0.4
sample mean		7 ± 1
ALHA77302 ,83*	EUC	7.7 ± 0.7
ALHA85001 ,19	EUC	0.09 ± 0.01
,20		0.10 ± 0.02
sample mean		0.10 ± 0.01
EET79004 ,101	EUC	18 ± 3
,102		10.2 ± 3.7
sample mean		14 ± 4
PCA82502 ,59	EUC	7 ± 1
,60		4.8 ± 0.7
sample mean		6 ± 1
EETA79006 ,60#	HOW	4.1 ± 0.4
,61		4.8 ± 0.7
sample mean		4.5 ± 0.5
EET83376 ,7#	HOW	4.4 ± 0.4
,8		5.1 ± 0.2
sample mean		4.8 ± 0.3
ALHA77219 ,58	MES	7 ± 1
,59		8 ± 3
sample mean		8 ± 2
RKPA79015 ,16	MES	<1
,17		<0.7
sample mean		<0.7

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

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

* We confirm pairing of ALHA76005 and ALHA77302 suggested in (AMN 4:2).
# We suggest that EETA79006 and EET83376 are possibly paired.