Hasan F.A. and Sears D.W.G. (1988b) Natural thermoluminescence level in meteorites recovered during the 1985/1986 field season. *Antarctic Meteorite Newsletter*, **11(1)**, 22-24. Johnson Space Center, Houston TX.

Natural Thermoluminescence Data for Antarctic Meteorites

The natural thermoluminescence level of a meteorite provides an indication of its terrestrial age and whether it has experienced recent reheating such as that associated with a small perihelion orbit ($\lesssim$0.7 a.u., say) or shock heating to $\gtrsim$250°C within the last 10^6 years or so. Further details can be found in a recent paper on the comparison of natural TL levels and ^{26}Al activities for 23 Antarctic meteorites (Hasan et al., 1987, Proc. 17th Lunar and Planet. Sci. Conf., Part 2, JGR, 92, E703-709). The data below are the first results from a laboratory set up by Fouad Hasan and Derek Sears, of the University of Arkansas, to systematically measure natural TL levels in returned Antarctic meteorites (see AMN 10(1), page 3). It is hoped that such data will help in the selection of samples with interesting radiation and thermal histories.

Table 4. Natural thermoluminescence level in meteorites recovered during the 1985/86 field season. (Data set: October 1987)

NAME	LT/HT[@]	E.D.[†]	NAME	LT/HT[@]	E.D.[†]
ALH 85016,2	2.5±0.2	101±12	ALH 85039,2	1.75±0.02	44±3
ALH 85017,2	0.498±0.007	4.2±0.7	ALH 85040,2	2.40±0.01	37±5
ALH 85018,2	2.10±0.04	36±3	ALH 85041,2	1.29±0.04	14±5
ALH 85020,4	2.33±0.09	14±2	ALH 85042,2	2.71±0.07	39±9.5
ALH 85023,2	3.03±0.07	51±1	ALH 85043,2	5.0±0.5	43±7
ALH 85026,2	2.2±0.1	28±10	ALH 85044,2	1.42±0.02	15±2
ALH 85027,2	3.5±0.2	85±147	ALH 85045,2	3.35±0.08	38±6
ALH 85028,2	1.28±0.08	13±2	ALH 85048,2	1.14±0.03	8±1
ALH 85029,2	1.83±0.06	69±3	ALH 85052,2	0.23±0.01	2.1±0.5
ALH 85030,2	1.85±0.08	29±4	ALH 85054,2	0.69±0.05	5±1
ALH 85031,2	0.18±0.01	1.1±0.5	ALH 85056,2	0.44±0.01	2.9±0.4
ALH 85033,2	9.7±0.1	83±24	ALH 85059,2	2.8±0.2	52±5
ALH 85034,2	2.4±0.2	86±8	ALH 85062,2	3.2±0.3	36±2
ALH 85035,2	0.57±0.01	12±2	ALH 85063,2	0.77±0.02	17±2.5
ALH 85037,2	0.47±0.01	7.2±0.5	ALH 85065,2	2.17±0.02	34±4
ALH 85038.2	1.78±0.02	11±3.5	ALH 85066,2	3.9±0.1	38±3.4

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Table 4, Continued.

NAME	LT/HT[@]	E.D.[†]	NAME	LT/HT[@]	E.D.[†]
ALH 85070,2	4.9±0.1	72±12	BOW 85800,2	2.5±0.2	39±3
ALH 85071,2	0.52±0.01	3.4±0.5			
ALH 85073,2	3.79±0.04	75±5	DOM 85501,2	0.49±0.02	4.0±0.5
ALH 85075,2	2.64±0.04	45±8	DOM 85502,4	2.1±0.1	25±2
ALH 85076,2	1.24±0.03	37±3	DOM 85503,2	2.21±0.05	44±7
ALH 85077,2	0.73±0.02	8±32	DOM 85504,2	2.90±0.08	34±3
ALH 85079,2	4.47±0.07	63±3.5	DOM 85505,2	1.11±0.02	8.1±0.7
ALH 85080,2	3.1±0.3	27±1	DOM 85506,2	3.09±0.08	36±1
ALH 85082,2	1.12±0.03	14±2	DOM 85508,2	1.44±0.05	25±4
ALH 85083,2	2.9±0.3	49±9	DOM 85509,2	2.99±0.04	46±3
ALH 85084,2	2.6±0.1	33±3	DOM 85510,2	3.37±0.08	45±9
ALH 85086,2	3.0±0.2	54±2			
ALH 85087,2	2.1±0.1	40±1	GEO 85700,2	0.83±0.02	18.7±0.8
ALH 85090,2	4.0±0.2	68±3	GEO 85701,2	3.7±0.1	63±7
ALH 85091,2	1.62±0.13	14±3			
ALH 85094,2	4.62±0.09	95±3	GRO 85203,2	5.1±0.2	55±5
ALH 85097,2	4.5±0.1	44±1	GRO 85204,4	2.5±0.1	53±5
ALH 85098,2	0.54±0.02	2.4±0.2	GRO 85205,2	1.71±0.02	31±4
ALH 85100,2	3.1±0.1	40±5	GRO 85207,3	3.91±0.02	44±4
ALH 85102,2	0.111±0.002	1.0±0.1	GRO 85208,4	3.7±0.01	42±3
ALH 85103,2	3.15±0.06	66±7	GRO 85209,2	1.3±0.4	26±4
ALH 85104,2	0.061±0.002	0.59±0.1	GRO 85210,2	1.58±0.02	18±2
ALH 85105,2	3.25±0.05	27±11	GRO 85211,2	2.35±0.08	40±8
ALH 85107,2	1.36±0.04	15±3	GRO 85212,2	3.77±0.04	74±11
ALH 85108,2	0.25±0.04	1.3±0.7	GRO 85213,2	4.92±0.07	61±8
ALH 85110,2	6.38±0.07	122±20	GRO 85214,5	3.8±0.1	72±17
ALH 85112,2	2.73±0.03	51±14	GRO 85215,2	0.066±0.001	0.80±0.04
ALH 85114,2	0.767±0.006	12±2	GRO 85216,2	0.99±0.01	9±3
ALH 85115,2	2.84±0.06	47±5	GRO 85218,2	0.54±0.02	3±1
ALH 85118,2	2.29±0.02	15±7.2	GRO 85463,2	0.10±0.01	1.5±0.2
ALH 85119,2	0.119±0.006	0.26±0.03			
ALH 85120,2	0.840±0.008	5±1.1	LEW 85301,2	1.08±0.04	0.41±0.03
ALH 85122,2	0.29±0.01	1.9±0.4	LEW 85303,3	2.6±0.4	31±2
ALH 85123,2	3.8±0.1	57±6.1	LEW 85305,2	0.20±0.01	0.10±0.01
ALH 85124,2	0.63±0.03	5±11	LEW 85313,3	2.22±0.05	4.4±0.4
ALH 85125,2	0.845±0.006	8±1	LEW 85314,2	2.19±0.03	22.2±0.7
ALH 85127,2	0.088±0.003	0.9±0.1	LEW 85315,2	1.54±0.04	24±4
ALH 85128,2	0.44±0.01	3±120	LEW 85316,2	2.9±0.1	38.5±0.1
ALH 85129,2	2.2±0.1	55±914	LEW 85317,2	2.19±0.01	34±5
ALH 85131,2	2.02±0.03	33±52	LEW 85318,4	0.97±0.01	16±1
ALH 85132,2	1.91±0.08	29±75	LEW 85319,4	0.66±0.01	4.9±0.5
ALH 85133,2	3.1±0.2	53±67	LEW 85321,1	2.46±0.05	34±3
ALH 85135,2	2.54±0.03	28±20.03	LEW 85322,4	2.44±0.08	48±9
ALH 85136,2	1.41±0.07	43±10	LEW 85323,2	0.61±0.01	8±2
ALH 85137,2	0.066±0.001	1.2±0.24	LEW 85325,4	1.41±0.06	40±2
ALH 85141,2	1.49±0.03	14±26	LEW 85324,5	2.0±0.2	28±4
ALH 85142,2	1.73±0.01	36±41	LEW 85327,11	0.07±0.01	0.8±0.1
ALH 85143,2	0.547±0.007	4±11	LEW 85329,2	1.71±0.08	28±3
ALH 85144,2	4.6±0.1	96±9			
ALH 85146,2	3.2±0.1	36±6			

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Table 4, Continued.

NAME	LT/HT[@]	E.D.[†]	NAME	LT/HT[@]	E.D.[†]
LEW 85330,2	0.98±0.02	19±3	LEW 85386,2	0.024±0.001	0.25±0.02
LEW 85331,2	2.7±0.1	55±3	LEW 85398,2	1.1±0.1	5±1
LEW 85333,2	2.9±0.1	30±5	LEW 85402,2	1.96±0.06	27±1
LEW 85334,2	1.73±0.03	9±2	LEW 85403,2	1.31±0.03	13±1
LEW 85335,2	0.63±0.01	9±2	LEW 85404,2	2.13±0.06	23±5
LEW 85336,2	4.1±0.2	54±3	LEW 85405,2	0.56±0.02	3±1
LEW 85337,2	0.85±0.03	8±1	LEW 85406,2	1.53±0.03	11±1
LEW 85338,2	1.70±0.04	14±1	LEW 85413,2	0.70±0.02	8±1
LEW 85340,2	1.77±0.05	45±10	LEW 85418,2	0.84±0.02	18±1
LEW 85341,2	1.09±0.07	7±1	LEW 85420,2	4.6±0.2	58±4
LEW 85343,2	2.24±0.08	31±6	LEW 85423,2	2.0±0.1	33±1
LEW 85345,2	2.5±0.2	31±4	LEW 85426,2	0.61±0.01	4.0±0.5
LEW 85346,2	2.8±0.3	35±4	LEW 85427,2	3.9±0.2	32±7
LEW 85347,2	2.9±0.3	20±4	LEW 85428,2	1.06±0.03	30±7
LEW 85348,2	1.39±0.04	16±2	LEW 85429,2	2.99±0.06	47±7
LEW 85350,2	0.84±0.02	7±2	LEW 85433,2	4.50±0.04	27±6
LEW 85351,2	0.60±0.02	3.0±0.2	LEW 85441,2	1.15±0.01	0.32±0.05
LEW 85352,2	0.61±0.03	2.5±0.5	LEW 85443,2	2.63±0.06	26±2
LEW 85353,2	0.17±0.01	0.5±0.2	LEW 85445,2	1.69±0.03	29±2
LEW 85354,2	0.07±0.01	1.9±0.4	LEW 85446,2	2.75±0.07	50±7
LEW 85356,2	1.1±0.1	20±6	LEW 85448,2	8.2±0.2	83±6
LEW 85357,2	0.60±0.02	9±3	LEW 85449,2	0.59±0.04	3±1
LEW 85359,2	1.6±0.1	31±6	LEW 85450,2	0.46±0.05	3±1
LEW 85360,2	0.037±0.001	0.55±0.03	LEW 85451,2	0.134±0.004	1.6±0.2
LEW 85362,2	0.71±0.03	7±2	LEW 85454,2	0.226±0.001	1.70±0.06
LEW 85368,2	0.063±0.003	1.13±0.04	LEW 85455,2	0.26±0.01	2.0±0.2
LEW 85371,2	1.7±0.2	30±3	LEW 85456,2	3.33±0.03	24±3
LEW 85373,2	1.4±0.2	58±15	LEW 85457,2	0.213±0.004	2.5±0.2
LEW 85379,2	1.10±0.02	15±3	LEW 85458,2	2.06±0.04	33±1
LEW 85380,2	0.63±0.01	9±1	LEW 85459,2	0.26±0.01	1.7±0.1
LEW 85381,2	0.69±0.03	14±5	LEW 85460,2	0.914±0.004	8±1
LEW 85383,2	2.1±0.1	26±2	LEW 85461,2	3.9±0.1	59±14
LEW 85384,2	2.71±0.03	33±2	LEW 85464,2	0.99±0.02	7±1
LEW 85385,2	0.72±0.01	6.1±0.4	LEW 85465,2	0.52±0.02	19±3
			LEW 85472,2	1.63±0.05	32±6

[@] Ratio of the height of the low temperature peak (~250°C) to the height of the high temperature peak (~400°C).

[†] E.D.: Equivalent dose in krad at 250°C glow-curve temperature. (Note that due to a calibration error, values quoted in Hasan et al., 1987, are too high by a factor of 14.04.)