

Catalogue of LDE-type flares (1992–1993)

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Abstract. The continuation of the list of long-lasting SXR flares (LDE-type) is given in Table 1. The latter contains the list of LDE flares observed from June 1992 to June 1993, and ties in timewise with the previous paper (Antalová 1990); it is only available in a computer-file form. One considers temporal variations of the occurrence of the LDE flares, with SXR duration exceeding 2 hours, throughout the 22-nd cycle. Comparison of the solar cycles 20, 21 and 22 (Antalová 1993) yields the following results:

- The maximum of the Cosmic Ray Ground-Level Event (GLE) occurrence was observed in the 22-nd cycle; in October 1989 and May 1990.
- The maximum values of both the LDE-type flare index and the Calgary cosmic ray intensity decrease are observed in the current 22-nd cycle.

The LDE-type flare occurrence (of C, M and X- SXR classes) on the whole solar disk (D) and in the northern (N) and southern (S) hemispheres, respectively, are given in Table 2.

Table 2. Total counts of LDE-type flares (January 1969-June 1993)

Cycle	R_{\max}	$(C-X)_D$	$(M-X)_D$	$(M-X)_N$	$(M-X)_S$
20	1968	2211	0815	470	325
21	1979	1519	0816	416	400
22	1989	3487	1293	504	789

Key words: the Sun - flares

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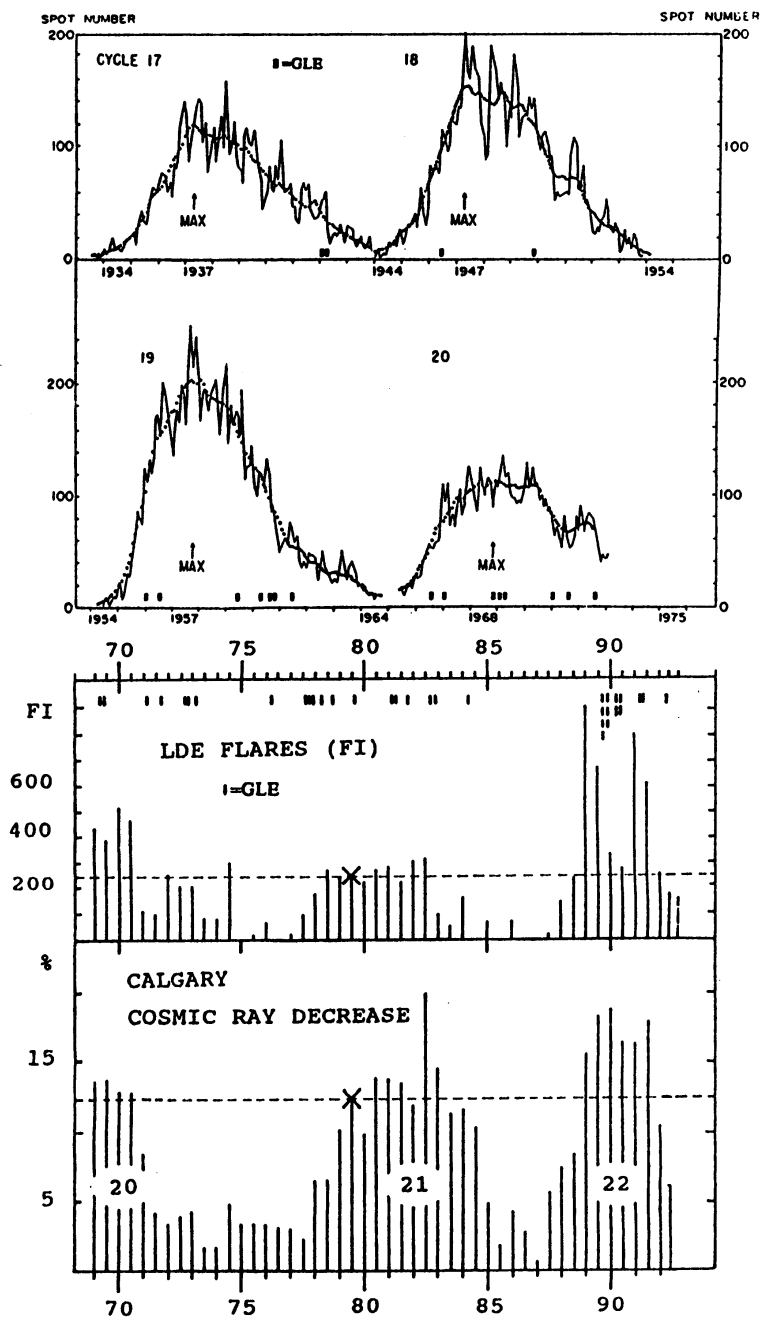


Figure 1. The ascending and declining phases of the 11-year solar cycle seem to be optimal for existence of GLE-events. Times of sunspot maxima and cosmic ray ground-level events are indicated for 17-22 cycles (cycles 17-20 by courtesy of Dr. Dodson and Dr. Hedeman 1973). The time series of the monthly mean values of LDE-type flare index (FI) as well as the monthly mean value of the Calgary cosmic ray intensity decrease (the maximum values were observed in June-July 1982 and in June 1991) are shown for the period January 1969 - June 1993. The monthly mean values were computed from semi-annual time intervals.