

Catalogue of LDE-type flares (1991–1992)

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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 November 1991 to June 1992, and ties in timewise with the previous papers (Antalová 1990, 1992); 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. Figure 1 (see next page) illustrates a comparison of the monthly mean values of the LDE-type flare index (FI) (for a period lasting from January 1969 to June 1992) with a temporal distribution of the other monthly mean solar indices, namely: the sunspot number R , the H-alpha grouped solar flare numbers and the Calgary Cosmic ray intensity decreases. The monthly mean values were computed from semi-annual time intervals. Comparison of the solar cycles 20, 21 and 22 yields the following results:

- The maxima of the sunspot number (R) and of the H-alpha grouped flare number were observed in the 21-st cycle.
- 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 1992)

Cycle	(C-X) _D	(M-X) _D	(M-X) _N	(M-X) _S
20	1891	0715	423	292
21	1519	0816	416	400
22	2886	1170	466	704

Key words: the Sun - flares

References

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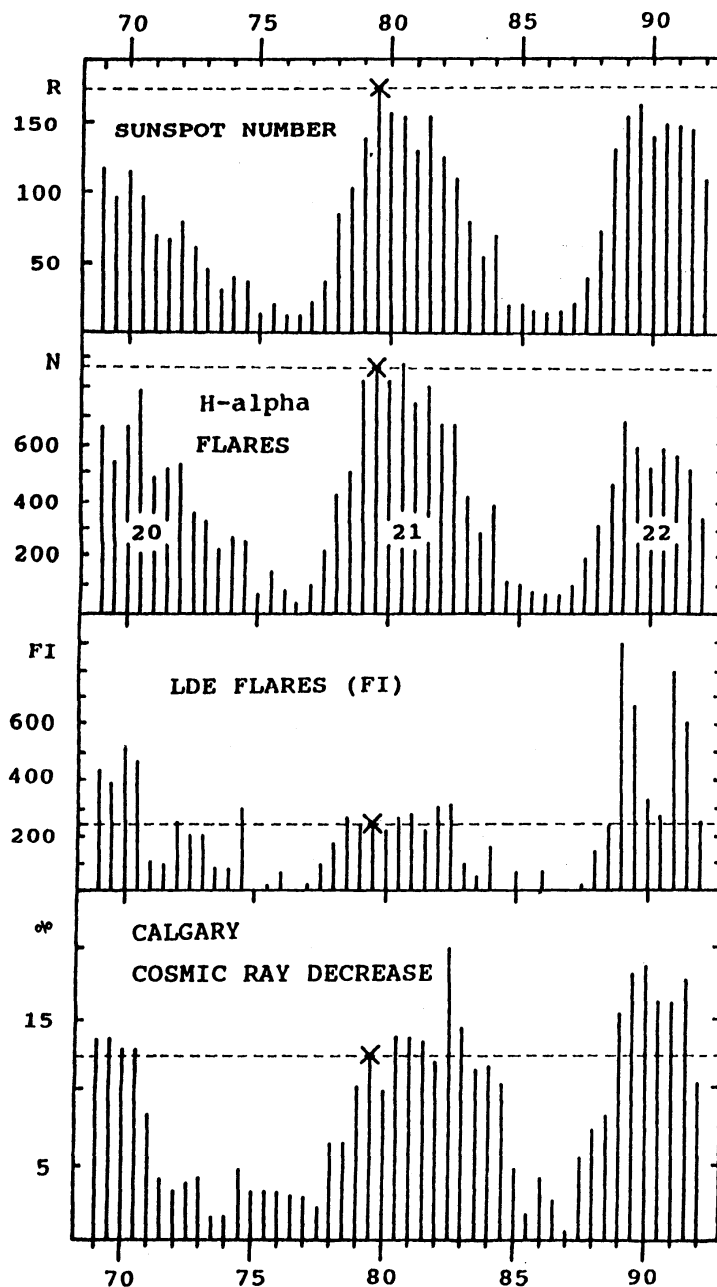


Figure 1. The time series of the monthly mean values of the sunspot number (R), H-alpha grouped solar flare numbers as well as LDE-type flare index (FI), shown for the period January 1969 - June 1992. The monthly mean values were computed from semi-annual time intervals. The bottom line relates to the monthly mean Calgary cosmic ray intensity decrease (the maximum value observed in the second half of 1982 and in the 22-nd cycle). A quasi-biennial periodicity in the LDE-type flare occurrence may clearly be seen in the 22-nd solar cycle (LDE-type flare impulses in 1989 and 1991). The maximum values of the sunspot and H-alpha grouped solar flare numbers belong to the 21-st solar cycle (the second half of 1979). The 22-nd cycle displayed the highest CR decrease and LDE-type flare occurrence of the last three solar cycles.