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THE OLD-NOVA GK PER (1901) : EVIDENCE FOR A TIME-DELAY BETWEEN ITS X-RAY AND OPTICAL OUTBURSTS.

One of the most intriguing peculiarities of the old-nova GK Per is its "dwarf nova-like" behaviour (Sabbadin and Bianchini, 1983, Astron. Astrophys. Suppl. Series 54, 393).

A comparative analysis of X-ray, UV, and optical data from the nova during the outburst phenomena revealed the existence of a time-delay between the X-ray and the optical light curves. This is shown in Fig.1 which refers to the 1978 outburst, the only one for which an extended X-ray monitoring of the old-nova is available ( King *et al.*, 1979, Monthly Notices Roy. Astron. Soc. 187, 77P). In this figure the X-ray data are as in King *et al.* (1979) whereas the optical ones have been kindly communicated to us by Janet Mattei, director of the AAVSO.

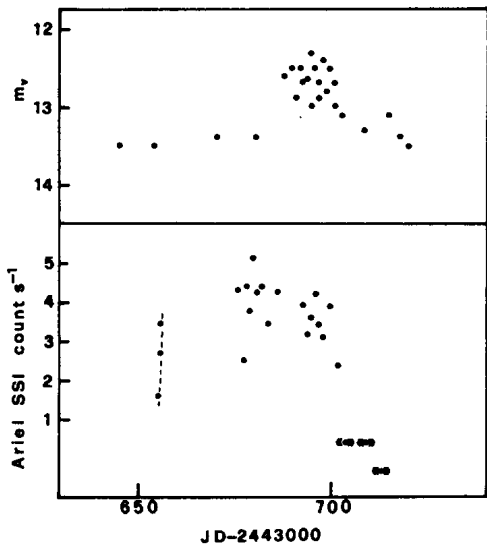


Fig.1. The optical (top panel) and the X-ray (bottom panel) light curves of GK Per during the 1978 outburst. Comments on the X-ray data points are given by King *et al.* (1979). The dashed line refers to what seems to be a steep rise.

Fig.1 clearly shows that the X-ray phenomenon started about 30 days before the optical one, which means that the former is not simply a consequence of an enhanced Roche-Lobe overflow from the secondary. This might also explain the presence of high excitation lines of OV  $\lambda$ 1371, [ArIII]  $\lambda$ 3110, [ArIV]  $\lambda$ 2854,2869 and [NeIV]  $\lambda$ 2423 in the IUE spectra of the nova taken during the early rise to the 1981 maximum and their

absence (or weakness) at light maximum and during the decline (Bianchini et al., 1985, submitted to Astron. Astrophys.).

We wish to note here that the time-delay between the X-ray and the optical outburst is quite a common phenomenon in X-ray novae (Ciatti et al., 1977, Astron. Astrophys., 56, 311).

It seems to us that a more systematic X-ray survey of the nova will be of paramount importance for understanding its outburst activity. Actually, only a continuous X-ray monitoring will allow the study of the very beginning of the phenomenon.

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