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X-RAY VARIABLE STARS IN THE PLEIADES

In the course of an x-ray survey of the Pleiades region (Micela et al., 1983), we have studied two x-ray exposures taken a day apart, respectively on February 7 and 8, 1981, with the Imaging Proportional Counter aboard the Einstein Observatory (Giacconi et al., 1979). Each exposure covers a field of view of  $\sim 60' \times 60'$  with a  $\sim 50\%$  overlap, 35 cluster members ( $m_v < 14$ ) fall in the useful field of view of the overlap region according to the optical catalog of Hertzprung (1947).

The characteristics of both observations are summarized in Table I.

Table I  
 Characteristics of the observations

	1st Exposure (15457)	2nd Exposure (15458)
Start time	JD 2444642.7571	JD 2444643.9195
Effective exposure	2931.0 sec	4511.5 sec
Limiting sensitivity	$\sim 2.8 \times 10^{29} \text{ erg sec}^{-1}$	$\sim 2.3 \times 10^{29} \text{ erg sec}^{-1}$

We have detected variability at a level greater than  $3\sigma$  in the x-ray flux of the star HzII 303, the star HzII 193 shows a marginal variation that if real should be at the 80% level. For the remaining stars in the overlap region counting statistics is too low to allow any positive statement on their variability.

The values of x-ray broad band (0.2 - 3.5 keV) count rates obtained in the two exposures for these two stars, together with the derived fractional variability and the level of significance are shown in Table II.

Table II  
 Pleiades stars identified as variable x-ray sources

Star#	Sp	1st Observ.		2nd Observ.		% Variability	N $\sigma$
		Rate*	+/-	Rate*	+/-		
193	G7	7.9	2.6	14.3	4.0	80	1.4
303	G9	12.0	3.9	37.9	6.2	177	3.0

\* Count-rate in units  $\text{count s}^{-1} \times 10^{-3}$

In the course of an independent optical survey of the Pleiades region the star HII 303 had been observed by van Leeuwen (1983), who reports anomalies in the V and (B-V) values and conjectures that this star might be double and highly reddened.

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