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TT Ari

Fast (sampling time of 3 seconds) unfiltered photoelectric observations of the nova-like variable TT Ari (= BD+14⁰341) have been carried out on three nights (22,23,24) of November 1978 with the 1-meter Cassegrain telescope of the Astronomical Observatory of Trieste, equipped with a twin-beam computer controlled photoelectric photometer bearing EMI 6256SA photomultipliers. A finding chart for TT Ari, showing also the star we have adopted as the comparison star, is given in Figure 1 (V= variable, C= comparison, a= BD+14⁰337, b= BD+14⁰339, d= BD+14⁰342).

Figures 2,3 and 4 show the lightcurve of TT Ari obtained on November 22,23,24 respectively. The magnitude differences are ordered as variable minus comparison. The phases were calculated by using the value of the orbital period $P = 0.137551$ (in days) given by Cowley et al. (1975); the phase zero corresponds to JD 2443835.29585, JD 2443836.27660, JD 2443837.27205 for the three graphs respectively. Strong flickering (up to 0.1 magnitudes) is superimposed to the regular light variations associated to the orbital period of TT Ari.

Power spectral analysis revealed no stable periodic brightness variations. However, a short living quasi monochromatic oscillation (~ 0.026 Hz frequency) lasting about 1500 seconds has been observed on November 22 (starting time JD 2443835.34419), as is shown in Figure 5a,b. The simultaneous spectrum of the comparison star does not show evidence of similar lines at the same frequency. Figure 5a,b is also representative for the power spectra of the variable and of the comparison star during the night of November 22. The range below ~ 0.02 Hz shows a power excess which can be attributed to the flickering of the variable.

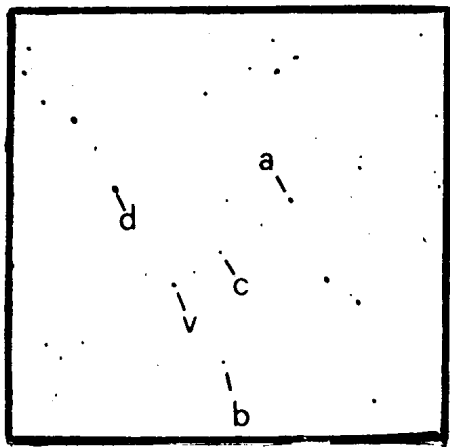
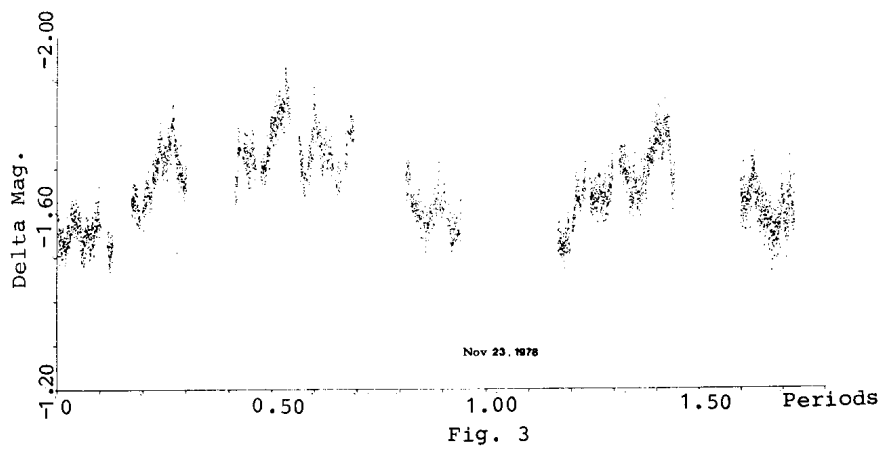
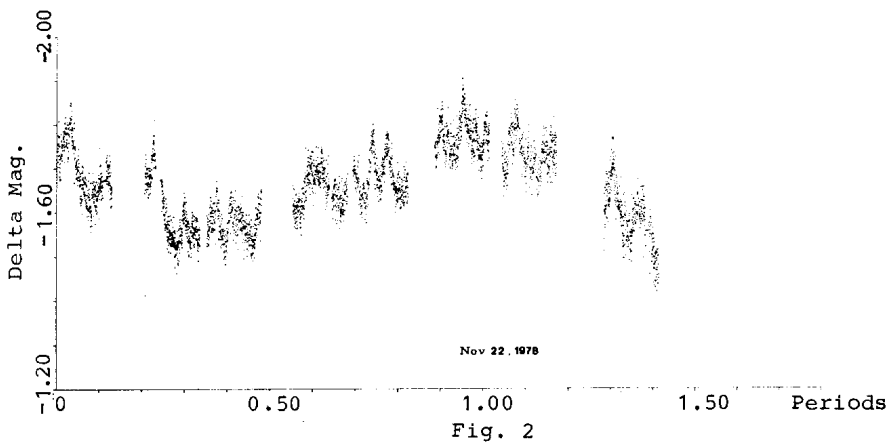


Fig. 1



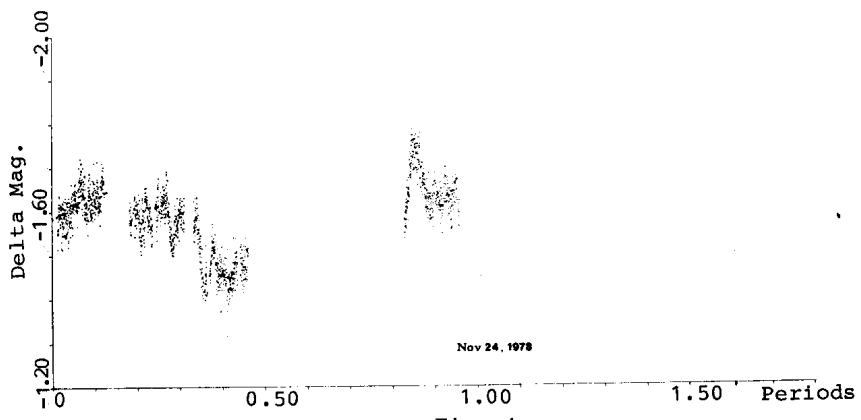


Fig. 4

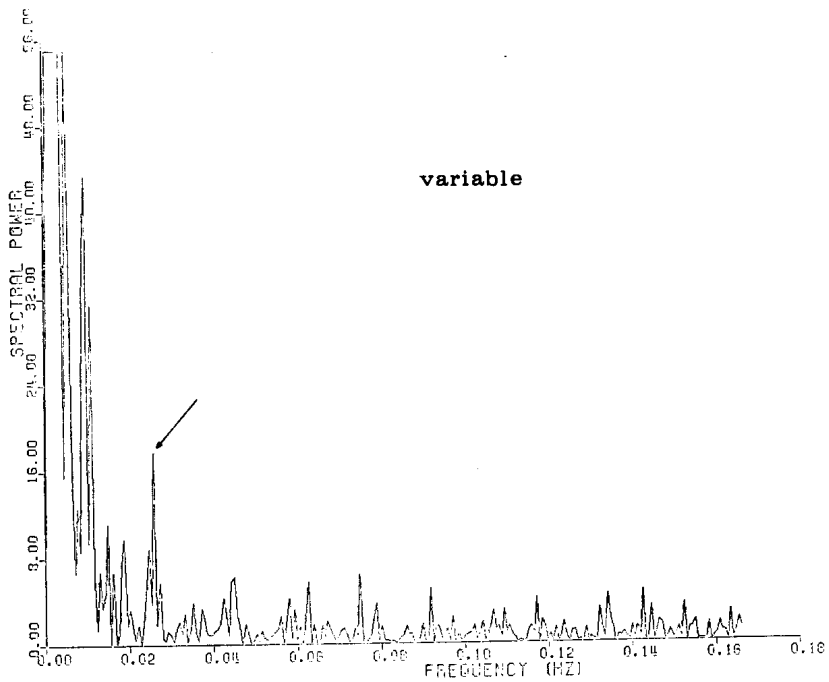


Fig. 5a

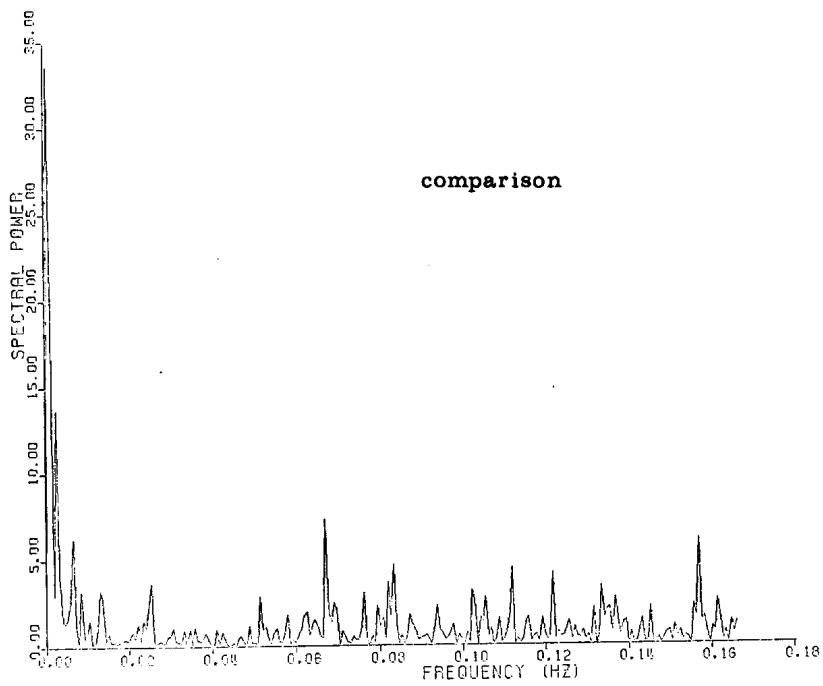


Fig. 5b

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Reference:

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Astrophys. J. 195, 413.