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DISCOVERY OF SHORT TIME-SCALE OSCILLATIONS IN HD 74292

The small amplitude variability of HD 74292 was discovered in December 1988 in the course of the work on the Catalogue of WBVR Magnitudes of the Northern Sky Bright Stars (Kornilov et al., 1991). The star has not yet been mentioned as variable in any catalogues and lists of variable stars. Co-ordinates of the star are RA=$8^h44^m14^s.89$, D=+32°03'45".1 (2000.0), spectrum A2, mean magnitudes and colours are V=$7^m.032$, B−V=$0^m.233$, W−B=$0^m.030$, V−R=$0^m.211$.

The photometric observations were carried out at Tien-Shan High-Altitude Observatory of Sternberg State Astronomical Institute with 48-cm reflector. Four-channel WBVR photometer constructed by V. G. Kornilov and A. V. Krylov and single channel UBV photometer constructed by the author of this paper were used. The total of nine sets of observations were obtained on the following Julian Dates:

Set No.	J.D. 24...
1	47509.3008–.3843
2	47622.1753–.3027
3	47623.1284–.2812
4	48255.2734–.5098
5	48278.3701–.4854
6	48291.2607–.4219
7	49028.1445–.4611
8	49040.1016–.4468
9	49043.0877–.2814

HD 75332 (Sp.: F7Vn, V=$6^m.228$, B−V=$0^m.526$, W−B=$-0^m.127$, V−R=$0^m.437$) was used as a comparison star. The stability of this star is undoubted because it has been checked many times during the photometric sky survey (Kornilov et al., 1991), the r.m.s. error of a measurement is of $0^m.002$ in V band. HD 74057 (Sp.:F8, V=$7^m.201$, B−V=$0^m.585$, W−B=$-0^m.099$, V−R=$0^m.486$) was a control star.

The light curves of HD 74292 in V band obtained during the last four sets of observations (Nos. 6–9) are shown in Figure 1. The deviations ΔV from the mean magnitude are plotted against Julian Date. These curves demonstrate rapid oscillations with maximum amplitude of $0^m.05$ in V.

A preliminary periodogram analysis was carried out using Deeming's (1975) and PDM methods in the period range from $0^d.025$ to $0^d.10$. The whole data set does not give definite result. Sets 1–3 confirm variability but are not sufficient for independent period search. Sets 4–6 show multiple peaks in the power spectrum with maxima near $0^d.080$ and $0^d.046$. Sets 7–9 show distinct variability pattern with predominating peak at $0^m.038$ in the power spectrum.

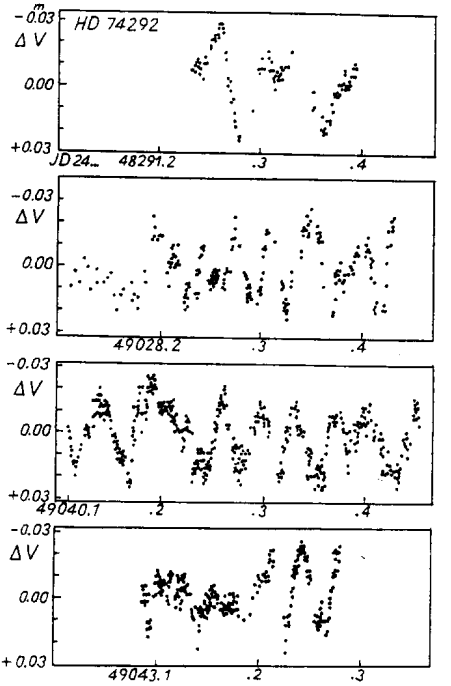

Figure 1. Light curves of HD 74292

On the base of the spectrum, color indices and parameters of oscillations, HD 74292 may be classified as a δ Scuti type variable.

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