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HD 12932, A NEW RAPIDLY OSCILLATING CP2 STAR\*

In 1973 Bidelman and MacConnell published "early results" from the jet unfinished project, an MK classification of all southern HD stars. Among other peculiar objects they also present a list of CP2 stars in their paper. The 10.3 magnitude star HD 12932 was classified in this list with a SrEu peculiarity and strong K and H+He lines. No further information about this star is published so far (SIMBAD data bank).

HD 12932 was included recently in our survey for rapidly oscillating CP2 stars, which was initiated by us at ESO (La Silla) in 1978. The star was observed the first time in 1988 during three nights, Sep 5-8, with the Dutch 90cm telescope and the Walraven *VBLUW* photometer at La Silla/Chile (ESO). HD 12932 was monitored continuously with an integration time of 16" for about three hours a night, only occasionally interrupted to measure the sky and/or to check the centering of the star in the diaphragm.

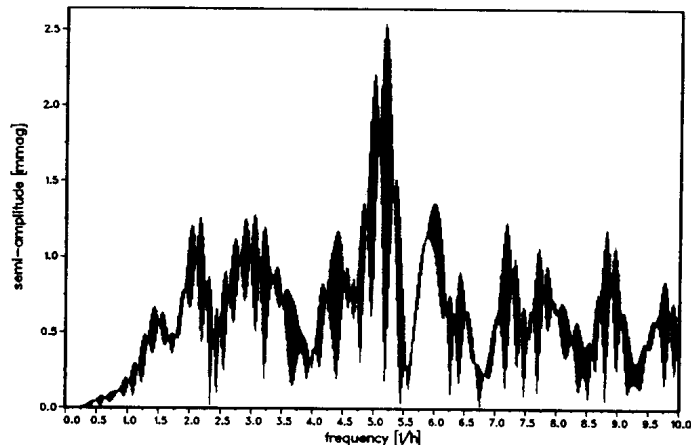


Fig.1: Amplitude spectrum for HD 12932 of the entire 1988 data set, 0.9m Dutch telescope at ESO, Walraven-B.

\* Based on observations collected at the European Southern Observatory (La Silla, Chile) in the framework of the European Working Group on CP stars.

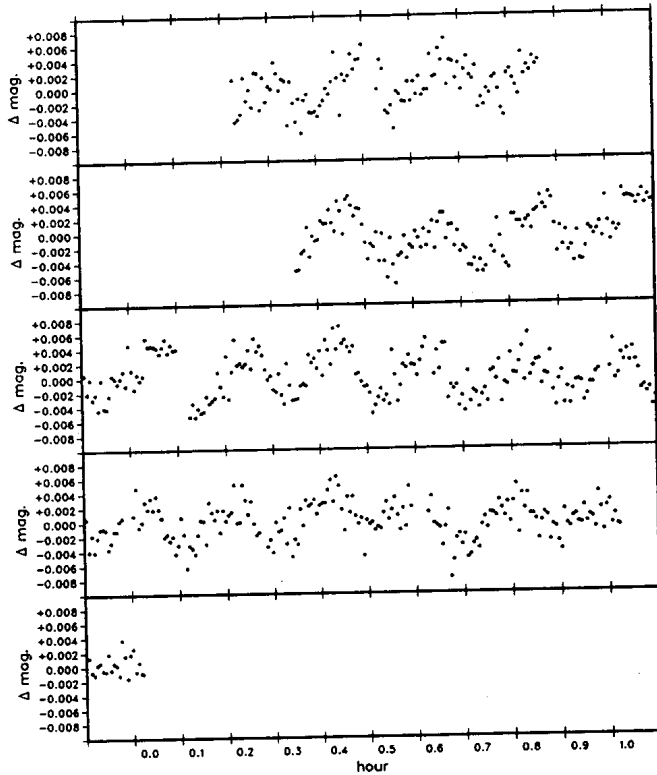


Fig.2: Light curve of HD 12932 during the night of August 28/29, 1990, in Johnson-B, ESO 1m-telescope.

Our observing and reduction procedure is described in more detail in Schneider and Weiss (1983) and in Weiss and Schneider (1984).

We were looking for periods of 5 to 20 minutes, and therefore no comparison star was observed. Although this means that there is no compensation of fluctuations of the sky transparency, such changes will be at random and slow enough to allow for an elimination of these effects by applying a low-frequency filter. This procedure is standard in observing rapidly oscillating CP2 stars from a good photometric site.

The data were analysed with Fourier techniques, using the

slightly modified algorithm of Deeming (1975). In Figure 1 we present the amplitude spectrum of the entire Walraven-*B* data. A peak at  $f = 5.17$  c/h (11.6 minutes) with an amplitude of about 2.5mmag is clearly above the noise level. This peak is also present in our *V* and *L* data, while in *U* and *W* the amplitudes exceed only marginally the noise level.

To confirm the discovery of a new rapidly oscillating CP2 (roAp) star we planned to observe HD 12932 again in 1989, but unfortunately we were granted only telescope time at the 50cm SAT, which is too small for the required photometric accuracy. However, in August 1990 we were able to obtain high quality photometric data with the ESO 1m-telescope (Johnson-*B*) of which we present the pulsation light curve of HD 12932 during the night of 1990, Aug. 28-29., (Figure 2) as an example.

We thus announce the discovery of another rapidly oscillating CP2 star, HD 12932, which will be the 15<sup>th</sup> member of this group so far. Further observations will be carried out by the authors in the near future to determine more precisely the power spectrum of this object.

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