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ON THE PULSATION OF HD 201601

The discovery of the pulsation of HD 201601 (HR 8097, γ Equ) with a period of 12.5 minutes by Don Kurtz (1982, priv. comm.) was an important contribution to the group of oblique pulsators (Kurtz, 1982). HD 201601 is particularly interesting since magnetic field variations with a period of about 72 years (Bonsack and Pilachowski, 1974) would imply an extremely slow rotation, if explained on the grounds of the oblique pulsator model.

A unique feature of the short time scale pulsation of HD 201601 seems to be that the amplitude is variable in time scales considerably shorter than the magnetic field variations. A possible explanation could be that the magnetic field variations are indeed of solar-cycle type, as suggested by Krause and Scholz (1981) and that the rotation period is about 38 days (Kurtz, priv. comm.).

HD 201601 was observed in July 9, 10, and 11 1983 (UT) at the Mauna Kea Observatory, Hawaii, using the 24" telescope of the University of Hawaii.

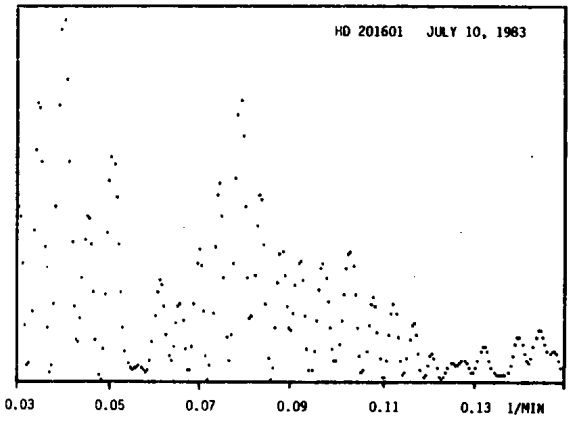

Figure 1:Power spectrum of HD 201601 for July 10, 1983

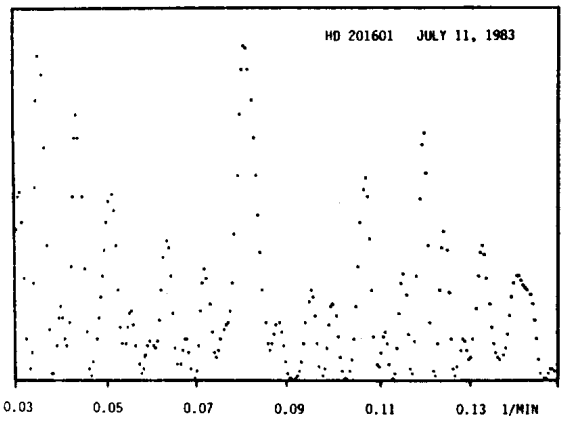

Figure 2:Power spectrum of HD 201601 for July 11, 1983

A classical single channel photon-counting photometer with a Johnson B-filter and a 1.2D neutral density filter was used in combination with a RCA C31034A photomultiplier. The observations are part of a survey for pulsating Ap stars initiated at the European Southern Observatory, Chile, and at the Mauna Kea Observatory. More details concerning the observation technique and reduction can be found in Weiss (1984). In Figures 1 and 2 the best and worst case for the power spectra are presented. In all three cases, however, the power peaks at a frequency of about 0.079 (1/min) are clearly distinguishable from noise. The amplitudes seem to be constant for all three nights and are estimated to be about 0.8 mmag (B). A final analysis of the data will be published elsewhere.

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