PULSATING SUB-DWARFS - THE RESULTS OF A NEW SEARCH

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Hot subdwarfs are blue sublumimous objects not yet at the white dwarf cooling sequence but beyond the red giant branch evolutionary stage. Greenstein & Sargeant 1974 have identifed 2 main classes according to composition : H-dominated sdB stars and the He-dominated sdOs. The Edinburg-Cape survey and the Hamburg Quasar survey have resulted in the discovery of several pulsating stars.

The aim of this short study was to identify pulsators in a sample of $\sim$ 13 stars that were observed with the Nordic Optical Telescope in May/June. The stars cover a range in temperature from 30000 - 39000 K.

The data were reduced using the "QUILT" software package, developed for WET data analysis. Most of the subsequent analysis was carried out using the Nov. 1998 version of MIDAS.

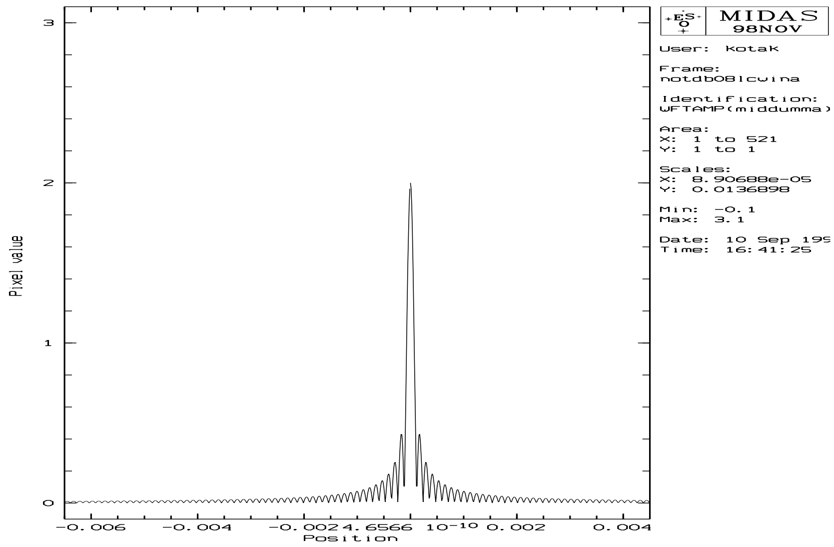

Figure 1. Window function for PG1618+563

Peaks in the Fourier transform were considered to be significant if they were present at the 4σ level. An example of a subdwarf that does not show much variablility is shown below.

Most of the analysis was focused on PG1618+563 as it showed definite signs of variablitity and had the longest data-set. The resolution of the amplitude spectrum was found to be $\sim$5.5 μHz At least 4 peaks were identified with reasonable confidence. These peaks were concentrated around $\sim$140s and show tantalizing hints of splitting. It is difficult to say from such a preliminary analysis whether this could be due to rotation or magnetic effects.

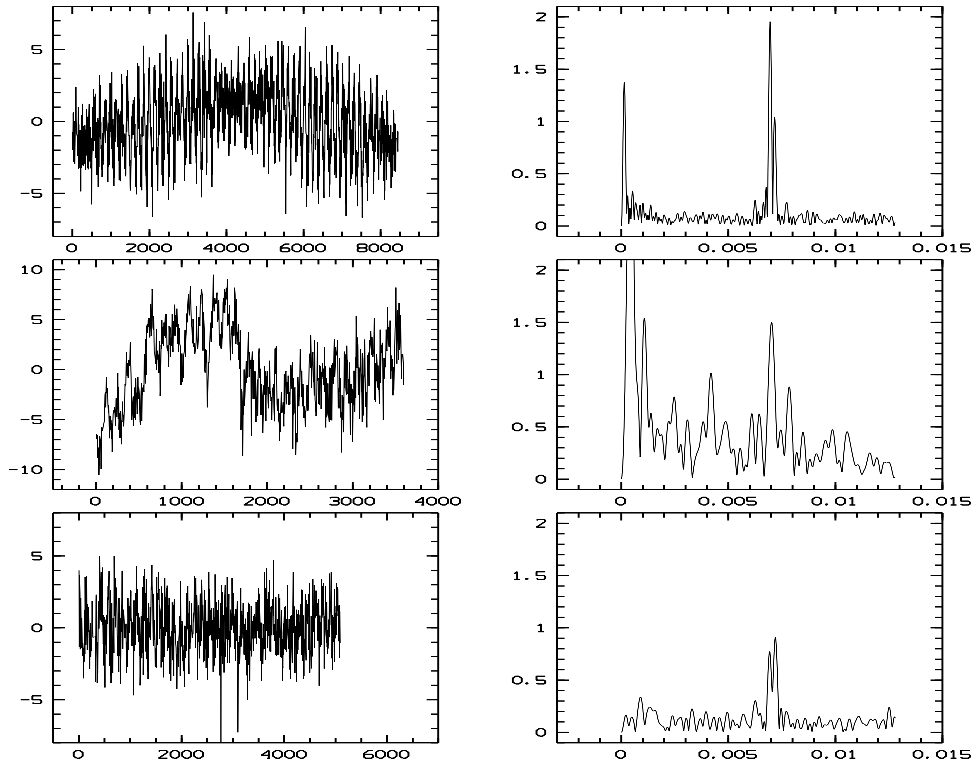

Figure 2. Lightcurve and Fourier Transform for PG1618+563 in U (top), B(middle) V(bottom) filter. y-axis in Hz and x-axis in mma

However, we note that if the splitting *is* real, then this would be the *first* sub-dwarf in which such splitting was observed.
The lightcurves taken in U,B,V filters seem to point to a wavelength dependence of the pulsation implying that g-modes are dominant. However, accurate determination of T_{eff} and log g is imperative before further analysis of the pulsation physics can be carried out.