

# MAGNETIC FIELDS ON DQ WHITE DWARFS WITH CARBON MOLECULAR LINES

T. Vornanen<sup>1</sup>, S. Berdyugina<sup>2</sup>, A. Berdyugin<sup>1</sup>, V. Piirola<sup>1</sup>

<sup>1</sup>*Department of Physics and Astronomy, University of Turku, Turku, Finland* <sup>2</sup>*Kiepenheuer Institute für Sonnenphysik, Freiburg, Germany*

We present results from spectropolarimetric observations of 12 DQ white dwarfs with C<sub>2</sub> absorption features obtained with VLT/FORS1 and NOT/ALFOSC. We have found one target that shares the same polarization properties with the only object (G 99-37) known so far to have polarized CH molecular bands. This star, GJ 841B, has a magnetic field strength of 130 T (1.3 MG) and a temperature of 6100 K according to our model that is based on calculations of magnetic dichroism appearing in molecular bands in the presence of a strong magnetic field. Unlike G 99-37, GJ 841B also has polarized C<sub>2</sub> features. In addition to GJ 841B only one other white dwarf in our sample shows polarization signatures. WD 1235+422 has strong polarization across the whole visible spectrum varying from 0 to 5 %. The polarization features coupled with the intensity spectrum has lead us to believe that WD 1235+422 is a tame version of a peculiar DQ white dwarf. Further investigations into its nature will perhaps reveal the mystery behind the differences in peculiar and normal DQ white dwarfs.