GP25 Long period oscillations in roAp stars

J. D. Riley¹, D. W. Kurtz¹ and M. S. Cunha²

- ¹ Centre for Astrophysics, University of Central Lancashire, Preston, U.K.
- ² Centro de Astrofisica, Universidade do Porto, Portugal

A model of the excitation mechanism of the oscillations in roAp stars has been proposed which predicts a theoretical instability strip. While most of the known roAp stars lie within this instability strip, there is a region of high luminosity and low frequency oscillation that so far appears to be unoccupied. One of the reasons for this has been the difficulty in determining the luminosities of Ap stars due to the depression of the c_1 index relative to normal A stars. This has the effect of reducing the δc_1 index which is one of the methods by which candidate Ap stars may be identified. Traditionally only those with a δc_1 of less than zero have been considered, however high luminosity Ap stars are likely to have a positive δc_1 . Since the release of the Hipparcos catalogue it is now possible to identify which stars have a truly high luminosity.

This poster shows the results of a survey of stars conducted using the 0.75 m telescope at the South African Astronomical Observatory. The stars selected have luminosities and effective temperatures consistent with being low frequency oscillators and have been selected from catalogues of known Ap stars and by use the use of a peculiarity index.