

COMMISSION 27 OF THE I. A. U.  
INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 577

Konkoly Observatory  
Budapest  
1971 September 6

A RESEARCH PROGRAM ON SOUTHERN RED DWARFS

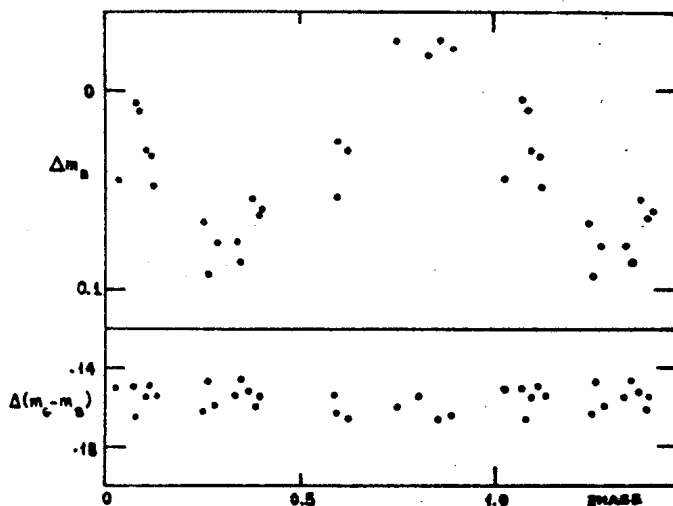
The present observing season is being devoted, at the I.T.A. Astronomical Observatory, to a survey on some red dwarfs, in order to make a search for variable stars which could present the same characteristics as BY Dra, CC Eri and FF And (1). A preliminary list has been set up involving almost 30 stars of spectral types dK4 or later whose apparent magnitudes are below 9<sup>m</sup>5 in order to be observed by a 20-inch telescope. In a first survey these stars have been studied in the colors B and G of the 6-color system of Stebbins and Whitford, and only one comparison star has been taken for each program star. The amount of stars which had shown some variability was far greater than expected, and soon check stars became necessary. So, far some stars whose relative measures show some variability it has not yet been possible to decide among the red dwarf or the comparison star. The low rate of elimination has lead to survey times longer than former previsions. An important factor in postponing the first stage of this program has been the bad weather conditions this winter in our region.

Nevertheless, one of the observed stars has soon been classified as variable, showing a light-curve close to that expected for BY Dra stars. It is the star HD 118100 = BD -7°3646, sp dK5e, V = 9<sup>m</sup>34. This star has shown light changes of 0<sup>m</sup>10 in both colors. The light variations show good regularity, the period being close to 4 days (between 4.0 and 4.1 days). In the light curve shown in fig.1 magnitudes and color index are referred to the star BD -8°3586, and zero phases have been calculated by the formula

$$JD\ 2441068,00 + 4d03\ E.$$

The star has been observed 16 times from April 27 to June 1, and 5 times more at the very end of June. The star BD -7°3652 has been served as check star.

For the other program stars almost 50 percent have been dropped after 5 to 10 photoelectric measures in different nights. Besides the star HD 118100 there are at least 3 more which relative magnitude varied for more than 0<sup>m</sup>1. Bad weather conditions had impaired the work last month so we cannot decide which one varied, the comparison or the program star, except for one case in which light



variability has been shown to be due to the comparison star (HD 99619 - probably a long period variable; its measures show slow variation of about  $0^m.2$  in 50 days). Three more stars have shown variations with smaller magnitude ranges, but require further observations before some conclusion can be drawn.

The criteria employed to set up the working list seem to be good. The list has been revised and could be published in a future issue of the IBVS.

S. FERRAZ MELLO and C.A.O. TORRES  
 The I.T.A. Astronomical Observatory  
 São José dos Campos, SP - Brazil