

SPECTRA OF BHB STARS IN M 3, M 13 AND M 92

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Spectra, at a dispersion of $\sim 50 \text{ \AA}$ per millimeter, have been obtained of BHB stars in the globular clusters M 3, M 13 and M 92 with the TV scanner on the Soviet Union's Six Meter Telescope. The spectra cover a range of 700 Ångstroms in 500 channels in which counts were made of the intensity of the stellar spectrum. At this dispersion the hydrogen Balmer lines (γ , δ , ϵ , H8 - H12) can be seen as well as the Ca II line at $\lambda = 3934$.

The aim of this project is to measure the equivalent widths of the Ca II lines (on the basis that the strength of this line is a good indicator of the [Fe/H] value for these stars). The preliminary results show that the Ca II equivalent widths of the BHB stars in the three clusters scale well with their known [Fe/H] values, but there are some BHB stars which have much larger equivalent widths than the others. Strömgren four-color photometry has been obtained for some of the same stars for which spectra are available and it seems that the stars with the larger than normal Ca II equivalent widths are the stars which have larger than normal c_1 indices (~ 1.3 instead of ~ 1.2).

The spectrum of M 13 16 (a star with $c_1 = 1.32$) is shown on the left side of Fig. 1. It has the strongest Ca II line observed in any of the BHB stars investigated in this program. The Ca II line occurs at channel number 375, H ϵ is to the left and H8 is to the right. Just below this spectrum is one of M 13 18 (with a $c_1 = 1.22$) which has a negligible K line. The spectrum on the upper left is of the FHB star, HD 161817. The K line is fairly strong because this star is just on the blue edge of the instability strip. On the right side of Fig. 1. is the spectrum of another BHB star with a strong K line, M 3 182, which has a c_1 index of 1.31. M 3 IV 18 and M 92 II 26 are BHB stars with weak K lines.

Further investigations are planned to see if all the stars with

the higher c_1 indices (> 1.3) have K lines with larger equivalent widths. The present data suggest that such a relation may be the case, but more observations are needed in order to confirm the hypothesis.

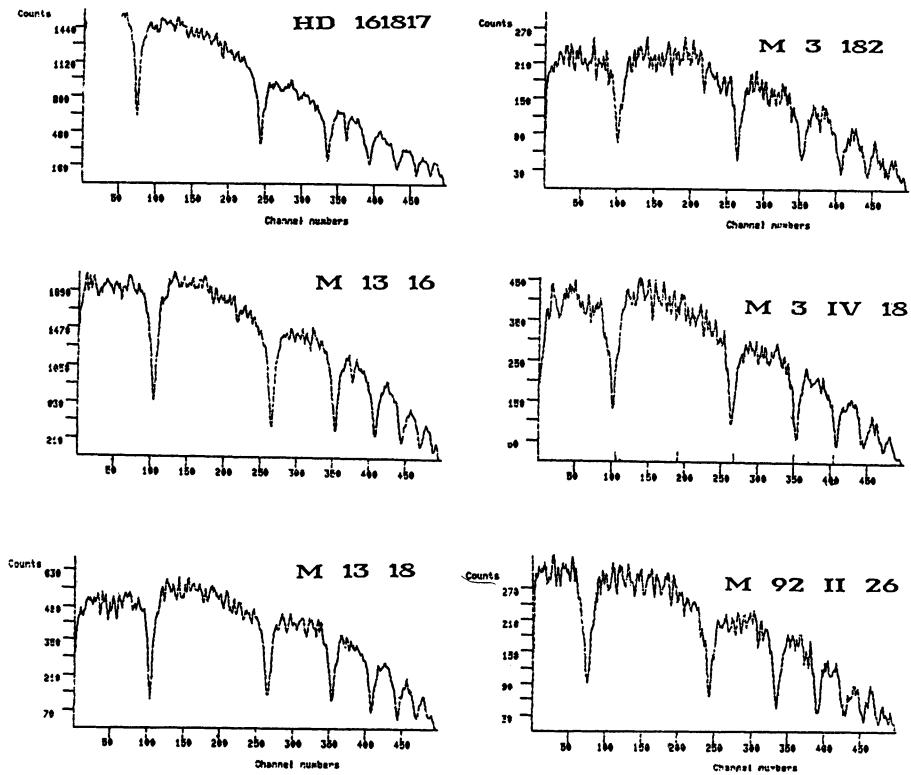


Fig. 1. Six Meter Spectra of Blue Horizontal-Branch A-Type Stars.