HIGH RESOLUTION EMISSION LINE PROFILES IN BLUE LUMINOUS STARS

RINO BANDIERA
Osservatorio Astrofisico di Arcetri, Firenze, Italy

PAOLA FOCARDI
Istituto Astronomico, Universita' di Bologna, Italy

ALDO ALTAMORE, CORINNE ROSSI
Istituto Astronomico, Universita' La Sapienza, Roma

OTMAR STAHL
Landessternwarte, Heidelberg, Germany

Emission lines are often observed in high luminosity stars and provide evidence of the presence of extended stellar envelopes. Ha is the most frequently observed across the H-R diagram, but lines of HeI or FeII are also found in emission in these stars. They could be used as diagnostics of the structure of their outer atmospheres and winds. High resolution ($1/dl \sim 10^5$) high S/N profiles of Ha and HeI 5876 in the galactic LBVs η Car, AG and HR Car, and in the LMC star S22 have been obtained with the ESO CAT-CES during 1984-87, and are described in Figs.1-5. We find that these stars show a large variety of profiles with narrow and broad emissions, wide or multiple blue-shifted absorptions. The profiles are largely variable. Once, a kind of inverse P Cyg profile was observed in HR Car (Fig.4). These results indicate the presence of large scale phenomena and high velocity fields which are dramatically variable in time. Continuous HIRES monitoring of these stars is urgently needed.

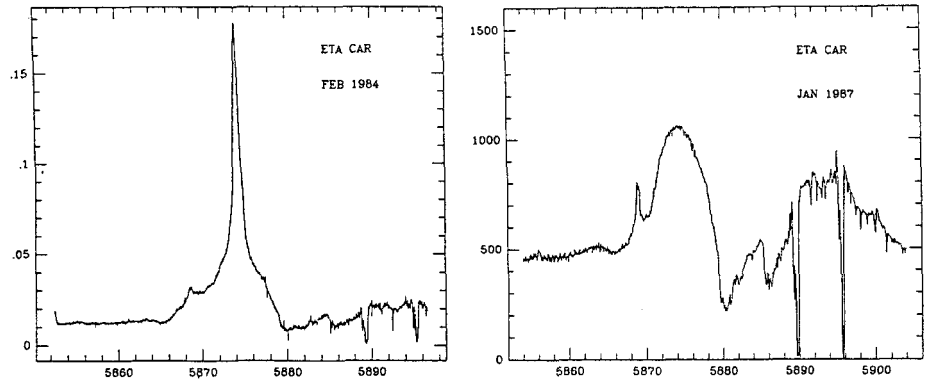

Figure 1. The large changes of the HeI 5876 A line in η Car.

K. Davidson et al. (eds.), Physics of Luminous Blue Variables, 279–280.

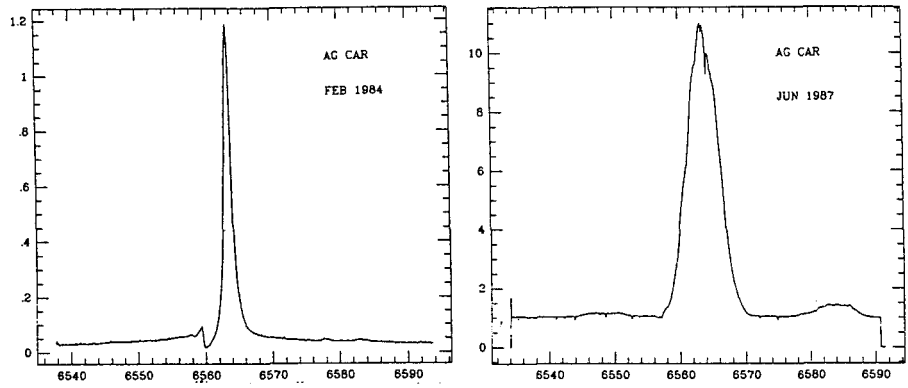

Figure 2. Variation of the Ha profile in AG Car.

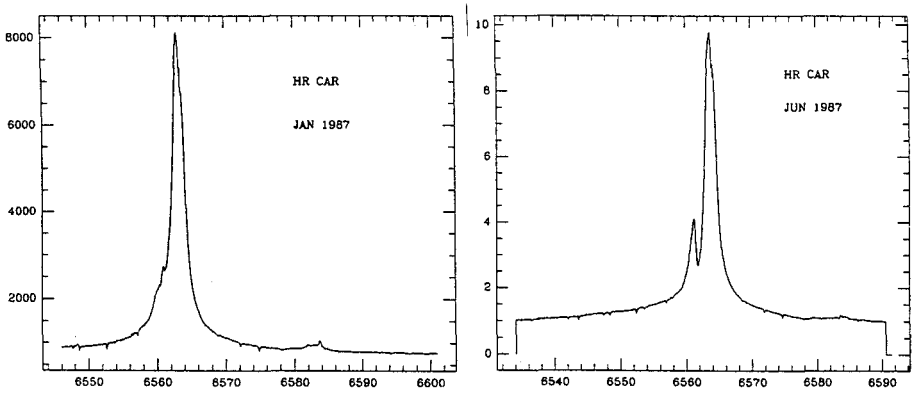

Figure 3. Variation of the Ha profile in HR Car.

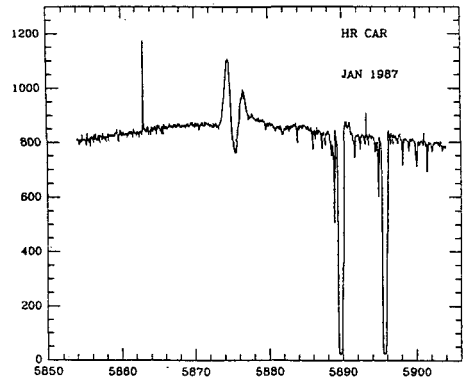

Fig.4. HeI 5876 A in HR Car.

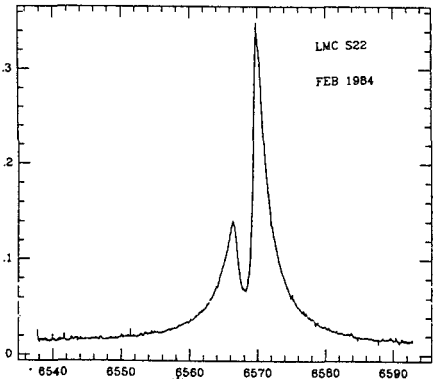

Fig.5. Ha profile in S22.

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