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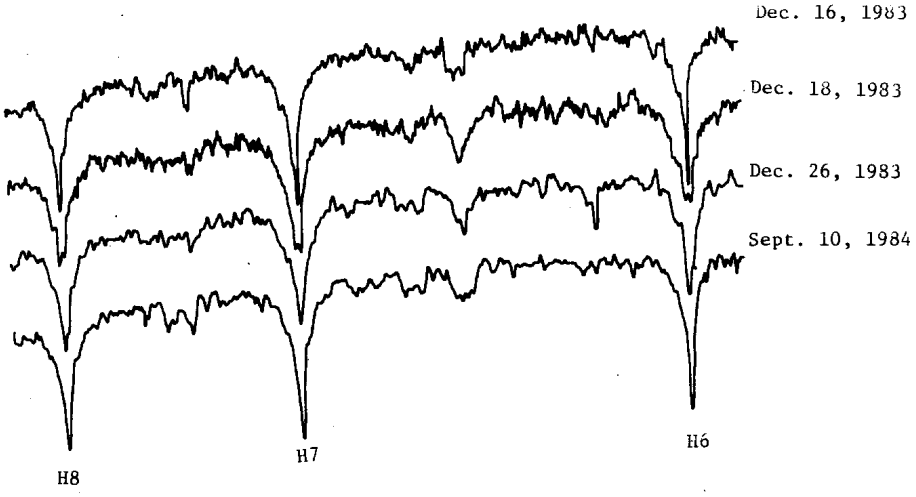
VARIATIONS IN THE SHELL SPECTRUM OF THE Be STAR EW Lac

We observed EW Lac with the grating spectrograph attached to the 60/90-cm Schmidt telescope of Beijing Observatory, giving dispersions of 50Å/mm and 86Å/mm. 22 spectrograms of this star were obtained from Sept., 1982 to Sept., 1984.

We found that the hydrogen shell lines on four spectrograms taken on Dec. 16, 18, 26, 1983 and Sept. 10, 1984, showed considerable variations. While the hydrogen shell lines were with single cores on December 16, 1983, these lines displayed double absorption cores on December 18, 1983, with the two components of nearly equal intensity. On a spectrogram taken on December 26, 1983, this phenomenon weakened considerably but was still apparent in H6-H10, and at the same time the R components became obviously weaker than the V components. On a plate taken on Sept. 10, 1984, these lines showed again sharper and deeper single cores as on Dec. 16, 1983 (see Fig.1.).



A portion of the density tracing of Balmer lines in four spectra of EW Lac
Figure 1

. Table I

Shell line velocities of EW Lac in km/sec.

Plate No.	Date	H5	H6	H7	H8	H9	H10	H11	H12
SA 1333	1983 Dec.16	-17.0	-12.0	-12.1	-4.2	-12.8	-20.2	-18.6	-10.2
SA 1334	1983 V	-155.5	-166.0	-166.9	-159.4	-171.3	-159.3	-204.6	-167.8
	Dec.18R	- 23.2	- 20.0	- 21.3	- 10.3	- 18.6	- 15.4	- 50.2	- 11.5
SA 1371	1983 V	/	-108.5	-108.9	-112.3	-109.4	- 99.6	-108.8	- 89.6
	Dec.26R	+ 14.1	+ 5.4	+ 17.9	+ 7.3	- 1.1	+ 15.1	- 1.4	/
SA 1427	1984 Sept.10	+ 7.6	- 17.9	- 21.6	- 19.0	- 4.4	- 17.8	- 29.5	- 23.1

We also measured the radial velocity of the shell lines H5-H12. The mean error in the velocity values is $\pm$ 3.9 km/sec. The results are listed in Table I. Our R component radial velocities are in agreement with the values of other authors derived from single cores. The V component radial velocities showed much larger variations than those of the R components from December 18-26, 1983.

GUO YU-LIAN and CAO HUI-LAI

Peking Astronomical Observatory
Akademia Sinica
Peking, China