

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

Number 3216

Konkoly Observatory  
Budapest  
15 July 1988  
HU ISSN 0374-0676

SHELL SPECTRUM VARIATIONS OF PLEIONE

We have been monitoring Pleione with the grating spectrograph attached to the 60/90-cm Schmidt telescope of the Beijing Observatory since the end of 1983. 27 spectrograms of the star at 50 Å/mm were obtained to date. They cover a wavelength range of  $\lambda\lambda$  3500-6600 Å.

Figure 1 gives the microphotometer tracings of the selected spectra of Pleione. On our plates the shell spectra of Pleione showed conspicuous variations. The shell absorption lines are weakening while the emission lines are strengthening with time. The rich metallic shell lines, in particular Ca I K and Na I D, were strong on the spectrogram taken on 1983 December 17. Then the lines gradually weakened. Most of the metallic

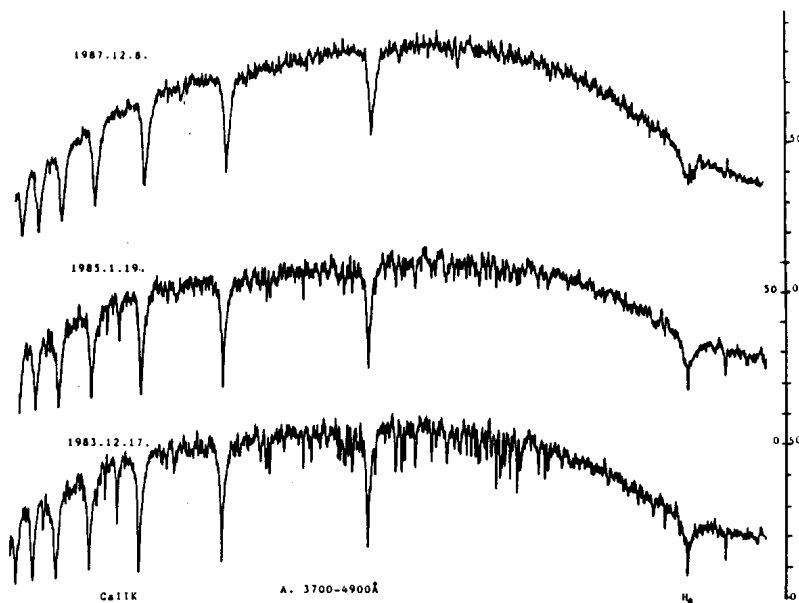


Figure 1 : The microphotometer tracings of the selected spectra of Pleione (The zero points of ordinate are fog of the plate).

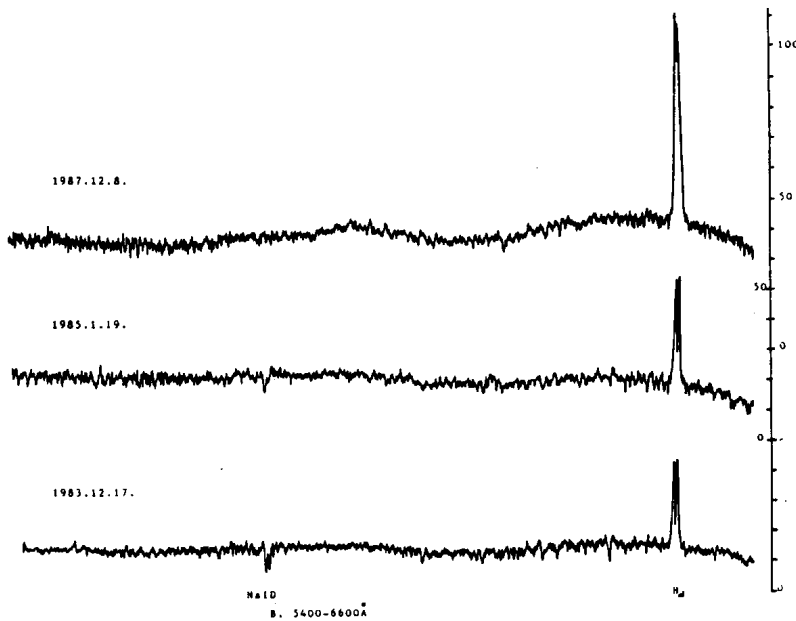


Figure 1(cont.)

shell lines, including CaIIK and NaID, became almost invisible on 1987 December 8. The Balmer shell lines gradually became diffuse, and the higher quantum number lines were the first to do so. The H $\beta$  shell absorption was very strong on the plate of 1983 December 17. It weakened considerably with time because of the strengthening of H $\beta$  emission. The two emission peaks at H $\beta$  were distinctly visible to the eye on the plate of 1987 December 8. The emission at H $\alpha$  also became appreciably stronger during the same time interval.

It appears that the shell phase of Pleione which began in 1972-1973 is ending slowly. Pleione is changing from shell phase to Be phase. Continued observation and analysis would be of great interest.

GUO YU-LIAN

Beijing Astronomical Observatory  
Academia Sinica  
Beijing, China