

## The Metallic-Line Close Binary System IW Persei

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The *UBV* photoelectric light curve of an ellipsoidal variable IW Per was obtained and a number of spectrograms were also taken with dispersion of  $10\text{\AA mm}^{-1}$ . New orbital elements are determined for this single-line spectroscopic binary:  $K_1=99.3\text{km s}^{-1}$ ;  $\gamma=0.2\text{km s}^{-1}$ ;  $a \sin i=1.80 R_\odot$ ;  $f(m)=0.093m_\odot$ . From analysis of the light curve, the geometrical ellipticity coefficient of the distorted components is found to be  $Z=0.037$ .

Applying the second-order theory of light variation due to distorted components (Kopal and Kitamura, 1968), we deduced simultaneously the orbital inclination and fractional radius of the primary component to be  $i=63^\circ$  and  $r_1=0.294$ . By taking  $2.0m_\odot$  for the primary component with spectral type A5 Vm, we found the mass of the secondary to be  $1.08m_\odot$ , which would correspond to a GO-type if it is a Main-Sequence star. These elements indicate that the system is a non-eclipsing detached close binary.

From intensity measurement of the lines Ca II-K, Sr II  $\lambda 4215$  and Sc II  $\lambda 4320$  on twenty-eight good spectrograms taken at various phases, those intensities and the intensity ratio  $S_c/S_r$  are found to vary systematically with phase. From these variation the distribution of the local metallicity on the surface of the Am primary component is discussed in connection with the distribution of the local surface temperature.

### 秋季學術大會

일시 : 1982년 10월 8일~9일

장소 : 경북 대학교 사범대학

## Surface Brightness distribution of NGC 7793.

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From the scanning of sky survey plates (ESO, SRC), we can calculate the physical parameters of NGC 7793. The extrapolated total magnitude until  $R^*=4.58'$  was 8.64 and the concentration indices were  $C_{21}=1.85$ ,  $C_{31}=2.78$ . Proportional brightness parameters were  $R^*=0.98'$ ,  $U_B=20.9 \text{ mag}/\square''$  at  $K=0.25$  and  $R^*=2.71'$ ,  $U_B=22.19 \text{ mag}/\square''$  at  $K=0.75$ . The axial ratio showed decreasing tendency from nucleus to outer region.

### 산개 성단 M67의 *UBV* 광전 측광\*

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M67에서 밝은 별들( $V<13$ )에 대한 *UBV* 측광을 수행했으며 특히 Sanders(1977)의 고유운동 자료에서 밝혀진 8개의 member stars에 대한 측광도 수행했다. 이 중 하나는 거성열 가장윗쪽에 위치한다.

거성열에 있는 clump stars와 전환점 윗쪽에 있는 밝은 별들에 대한 특성을 살펴보고자 한다.

\* Authors are grateful to the KNAO for telescope time and support.