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REVISED PHOTOMETRIC ELEMENTS OF Y Leo

Table

λ	7900
i	85.3±.2
r_h	.218±.006
k	1.281±.030
a_h	.220
b_h	.219
c_h	.217
a_c	.327
b_c	.275
c_c	.254
T_h(eq)	8800
T_h(pol)	8860
T_c(eq)	4400±40
T_c(pol)	4490
u_h	.38
u_c	.55
β_h	.25
β_c	.08
w_h	1
w_c	.5
L_h	.911
L_c	.089
q	.3
ε	1.27

The light variations of the Algol-type eclipsing binary Y Leo has been studied photoelectrically by Johnson in 1960 in four wavelength regions (UBV and infrared). Struve (1945) obtained a single-lined radial velocity curve.

We solved the (most complete) infrared lightcurve of Y Leo obtained by Johnson (1960) by means of WINK Wood's model (1972, 1973-1978). In the table we list our new photometric elements (for the explanation of the symbols see Mardirossian et al. (1980)). The chief variable parameters are the orbital inclination angle i, the unperturbed radius r_h of hotter component, the ratio $k=r_c/r_h$ of the unperturbed radii, and the temperature T_c of the cooler component. The temperature T_h of the hotter star was taken equal

to 8800^{0}K according to the spectral type type A3 and Flower's (1977) temperature scale. The mass ratio $q=M_c/M_h$ was taken to be equal to 0.3; this value was estimated from Struve's (1945) mass function $f(m)=0.038\ M_o$ together with the assumption that the primary obeys the empirical mass-spectrum relation typical of main sequence stars ($M_h=2.6\ M_o$).

Our photometric elements appear to be in substantial agreement with those computed by Johnson (1960) by means of Russell and Merrill's (1952) method. Y Leo is confirmed to be an ordinary semidetachedsystem, pratically free of complications. The temperature of the lobe filling secondary favours an early K spectral type.

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