PHOTOMETRIC AND H α OBSERVATIONS OF LSI+61°303

J. M. PAREDES, J. MARTÍ, F. FIGUERAS, C. JORDI, G. ROSSELLÓ, and J. TORRA
Dep. d’Astronomia i Meteorologia, Universitat de Barcelona, Av. Diagonal 647, E-08028 Barcelona, Spain

P. MARZIANI
Dep. of Physics and Astronomy, University of Alabama, Tuscaloosa AL 35487-0324, U.S.A.

J. FABREGAT, and V. REGLERO
Dep. de Matemática Aplicada y Astronomía, Universidad de Valencia, 46100 Burjassot, Valencia, Spain

M. J. COE, C. EVERALL, P. ROCHE, and S. J. UNGER
Physics Department, University of Southampton, Southampton SO9 5NH, U.K.

J. M. GRUNSFELD
Caltech, Pasadena, CA 91125, U.S.A.

A. J. NORTON
Dep. of Physics, The Open University, Walton Hall, Milton Keynes MK7 6AA, U.K.

and

R. ZAMANOV
National Astronomical Observatory Rozhen, POB 136, 4700 Smoljan, Bulgaria

1. Introduction

The Be massive X-ray binary LSI+61°303 is a 26.5 days periodic radiosource (Taylor & Gregory, 1984), exhibiting radio outbursts maxima between phases 0.6-0.8. Evidence of a photometric period of similar value has also been reported (Paredes & Figueras, 1986; Mendelson & Mazeh, 1989). The previous spectroscopic radial velocity observations of Hutchings & Crampton (1981) are in agreement with the radio period, and give support to the presence of a companion. We present new optical and infrared photometric observations and high resolution H α spectra of LSI+61°303.

2. Observations and results

The photometric and spectroscopic observations are presented in Fig. 1. The JHK data show a ~0.2 mag modulation with a deep minimum, which is reminiscent of eclipsing binaries. A detailed model involving attenuation and eclipsing of an emitting source associated to the secondary will be presented in Martí & Paredes (1993). A periodicity analysis applied to our V-

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band data indicates $25.8 \pm 0.3$ d as most significant period. A similar analysis merging our JHK data, after substracting their respective mean and dividing by the rms, gives $27.0 \pm 0.3$. Both values are close to the radio period. On the other hand, our $H_\alpha$ spectroscopic observations show evidence of line parameter variability with radio phase. In particular, the FWHM of the $H_\alpha$ red hump increase significantly during the phases of radio maximum, while the minimum value of the $H_\alpha$ EW and the maximum value of the B/R peak ratio are observed between radio phases 0.7-0.8. Further details are reported in Paredes et al. (1993).

References

Hutchings J.B., Crampton D. 1981, PASP, 93, 486
Paredes et al., 1993 (in preparation)