

SPECTROSCOPIC OBSERVATIONS OF THE EARLY-TYPE CONTACT BINARY AW LACERTAE

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Abstract. Spectroscopic observations were performed of the early-type contact binary AW Lac with an image-intensified coude spectrograph of 1.9-m telescope at the Okayama Astrophysical Observatory. A total of twenty-two spectra covering blue region with a dispersion of 16 \AA mm^{-1} have been secured on Kodak IIA-O baked plates. In every spectra sharp interstellar CaII H,K lines are clearly seen. The spectral type of AW Lac has been estimated as early B, which substantially confirms the one adopted in the photometric analysis by Jiang et al. (1983) and is different from A0 listed in General Catalogue of Variable Stars (Kholopov et al. 1985). Contrary to the suggestion by the photometric solution of Jiang et al., no definite secondary lines could be separated, though some indications of light contamination due to the secondary component are surely observed. This would imply that the light ratio of the components should be somewhat smaller than that derived by photometric analysis. No emission features appeared either. The measurement of radial velocities of the primary component for the orbital elements was made for twenty spectra by a conventional method. It was difficult to measure the radial velocities because the lines are quite broadened and deformed. Hence the measured values for the radial velocities should be regarded as rather preliminary. The derived spectroscopic elements, combined with the photometric data, give the absolute dimensions of the system for each assumed mass ratio q . For $q = 1$, being the adopted photometric solution by Jiang et al., we obtain too small value for the primary's mass, comparing with its spectral type. For the mass ratio as small as $q = 0.6$, we can obtain a reasonable value for the mass of the primary. However, in order to get more definite conclusion the cross-correlation method would be more appropriate for the spectroscopic analysis of this system.

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