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Observations of eclipses of UU Sge

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Abstract

We have performed spectroscopy and photometry of eclipses of the pre-cataclysmic variable UUSge using the 6-m telescope of the Special Astrophysical Observatory and the 1.5-m Russia-Turkish telescope. Our analysis of variations of the B-V and V-R color indices during the eclipses indicates that the temperature of the secondary is $T_{\text{eff},2} = 6000\text{-}6300$ K. A similar value, $T_{\text{eff},2} = 6200 \pm 200$ K, follows from our comparison of the observed spectrum of UU Sge at the total eclipse phase and theoretical spectra of late-type stars. We identify 27 absorption lines of 11 chemical elements in the secondary's spectrum. Their abnormal intensities indicate possible high-velocity turbulent motions (up to $\xi_{\text{turb}} = 10.0$ km/s) in the atmosphere of the star and the presence of hot gas above its surface. © 2012 Pleiades Publishing, Ltd.

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