

Invited lecture

INFLUENCE OF GRAVITATIONAL MICROLENSING ON BROAD EMISSION LINES OF QUASARS

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The change in the continuum flux of quasars by stars or compact object in intervening galaxies (gravitational microlensing) is a well-established observational phenomenon. X-Ray and Optical observational evidences about microlensing on broad emission lines (BEL) have very recently appeared. Using different kinematic and geometrical models for the broad line and the continuum regions we study the effects of microlensing on the light curves of the continuum and BEL of quasars at high optical depth in several known lens system. We also study the correlation between the BEL and continuum amplification according to these models.

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THE IMPORTANCE OF ALKALI LINE BROADENING IN BROWN DWARF ATMOSPHERES

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We present theoretical calculations of absorption profiles of sodium and potassium perturbed by helium and molecular hydrogen. The profiles have been included in model atmospheres of brown dwarfs to predict synthetic spectra which have been compared to previous calculations based upon Lorentz profiles and the classic van der Waals approximation. We find that the unified profiles provide increased opacities in the optical spectra of methane brown dwarfs, in agreement with previously reported missing opacities in the models. Moreover, we find that the satellite of the interaction between the potassium doublet at $0.77 \mu\text{m}$ and H_2 produces a spectral feature around $0.69 \mu\text{m}$ which might have been observed in the composite spectrum of the T-type brown dwarf binary system Eps Indi B.