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Study of pulsation spectrum of primary, rapidly-oscillating mass-accreting component of VV UMa

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We present the results of photometric study of pulsations in VV UMa Algol-type system as a part of the THASOS (Thai Southern Sky Survey for OEA Stars) survey ongoing at NARIT. The THASOS survey is focused on discoveries of a new oEA stars and detailed study their pulsation spectra and binary light curves. The hot (Te=9540K) primary component of the VV UMa, the0.687355-day Algol type system was discovered and classified as oEA star by Kim et al.2005.The dominant oscillation period of28.6min (50.3c/d) was reported. No further investigations were made in order to study the pulsation spectrum of primary component in the detail. We obtained11nights of new CCD observations of VV UMa with50cm telescope of Thai National Observatory trough V filter during 26 Dec 2013 to 23 March 2014. Data were reduced in a standard way relative the comparison stars in order to get light curve. The binary light curves were constructed and pulsational variations in the out-of-eclipse parts were investigated. The Discrete Fourier transform analysis applied to the pulsation light curves revealed multi-periodic spectrum of rapid oscillations with three dominant frequencies of29.47min (48.84c/d),30.628min (47.015159c/d) and 74.09min (19.43c/d). This is a first, detailed investigation of oscillation spectrum of VV UMa, results obtained will be used for development of further strategy of spectroscopic and photometric investigation of mass-transfer and asteroseismic analysis of this binary system.

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