

cities" of three cepheids  $\kappa$  Pav, T Vul, RT Aur. The scattering of proper "microturbulent velocities" for cepheids was proved to be in order of  $\pm 2$  km/sec.

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## RAPID PHOTOMETRY OF THE HD 197406 (WN7): SEARCHING FOR FLARE ACTIVITY IN WOLF-RAYET STARS

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**ABSTRACT.** We have undertake a study of Wolf-Rayet star HD 197406 in order to test an existence of stable periodic changes of light curve, which can arise as result of interaction of rotating compact companion and fast, dense, hot stellar wind. The observations of this star have been carried out in August and October 1991, and in August 1993 at the high-altitude Observatory Peak Terskol (3100m) North Caucasus with the help of 60cm telescope and high-speed double-channel photometer. The HD 197406 was monitored in UBV and moderate-band filters, that cover the range of pure continuum (central wavelength 4270Å and FWHM 100Å) and the range of He II 4859Å line (central wavelength 4870Å and FWHM 140Å). Star BD +52°2783 (Sp B9) was used as a reference star. Monitoring of two stars, HD 197406 and BD +52°2783, was carried out simultaneously in two parallel channels at the same filters

with the integrating times from 0.05 sec to 1.0 sec continuously during from 10 min to 1.5 hour. Besides, we observed the Wolf-Rayet star simultaneously in two channels in different filters. The obtained data reveal a flare variability at the pure continuum during about 1.5 min. In this case, the flares last about 1.0 sec and reach 0.2–0.3 magnitude. Variability of light curve in U,B and range of He II 4859 Å line also is detected. On the other hand, the stable periodic changes of light curve isn't detected with confidence. Therefore, such variability seems to arise rather as a result of magnetic field action on the surface of star, than as result of interaction of rotating compact companion with stellar wind. New observations of HD 197406 are needed, especially at the range of strong He II 4686 Å line, in order to clarify the physical situation.

**Key words:** Stars: HD 197406 – star: Wolf-Rayet – stars: flare – stars: photometric.