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Nature of light variations of the He-strong CP star HD 37776

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We simulate light curves of the helium strong chemically peculiar star HD 37776 = V901 Ori assuming that the observed periodic light variations originate as a result of inhomogeneous horizontal distribution of chemical elements on the surface of a rotating star.
We show that the chemical peculiarity influences the monochromatic radiative flux, mainly due to bound-free processes. Using the model of the distribution of silicon and helium on HD 37776 surface, derived from the spectroscopy, we calculate a photometric map of the surface and consequently the *uvby* light curves of this star. Basically, the predicted light curves agree in shape and amplitude with the observed ones. We conclude that the basic properties of variability of this helium strong chemically peculiar star can be understood in terms of the model of spots with peculiar chemical composition.