

OPTICAL AND INFRARED OBSERVATIONS OF THE PECULIAR PLANETARY NEBULA
HE2-442

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ABSTRACT. Infrared observations of He2-442 carried out at Crimean Station of Sternberg Institute during 1984-1986 revealed that in the past ten years the 1-10 μm flux has decreased by factor ~ 2.4 , the colour temperature determined from (K-L) index has decreased by ~ 300 K, and the infrared energy distribution has been changed also essentially. However, the definite cool star features, for example, Mira-like variability was not yet recorded.

In the optical spectra of He2-442 the low and high ionization emission lines of FeII, HI, HeII, [ArV], [FeVII] and forbidden lines with different critical density from $\sim 5 \times 10^3 \text{ cm}^{-3}$ for [S II] 6716 A to $\sim 5 \times 10^6 \text{ cm}^{-3}$ for [ArV] 7005 were identified. Thus in the gaseous envelope of He2-442 the regions of low and high density exist. There were also observed the small brightness variations of the star ($\Delta V = 0^{\text{m}}25$ between two nights in 1983).

It was found that He2-442 contains two emission line sources: a large ($\lesssim 7''$) nebula of a low surface brightness and a stellar source inside of the latter. However spatial structure of He2-442 is not yet investigated in detail.