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THE POSSIBILITY OF THE SEARCH FOR RELATIVISTIC OBJECTS USING THE ELLIPSOIDAL VARIABILITY OF THE RUN-AWAY STARS

Some evidence for the binary nature of the run-away stars and their connection with relativistic objects appeared recently (Shklovsky, Astron.J.Letters,USSR,2,No2, 119,1976). In this connection we propose to search for the periodic optical variability of these stars in the filter B of the UBV system. The list of the run-away stars (Blaauw, BAN 15, 265, 1961) is: HD 210839,24912, 157857, 152408, 203064, 30614, 34078, 149757, 38666, 151397,149363, 19374, 97991, 197419, 41534, 214930, 216534, 4142, 201910. The periodic variability of the run-away stars may be connected with their tidal distortion caused by relativistic objects - neutron stars or the black holes. The amplitude of this periodic ellipsoidal light variations may be ≤ 0.05 and is independent on wavelength; the period is about some days. It is also interesting to investigate the physical light variations of the run-away stars and to compare them with the variations of "ordinary" O-B stars with small spatial velocity. Note that some run-away stars (for example μ Col - see Cousins et al., R.O.Bull.No25,1961) show small-amplitude variability which may be caused by the ellipticity of the optical star. The photometric investigations of run-away stars are very important and we suggest joint observational efforts in this field during 1976.

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