

Astronomy Reports 2010 vol.54 N12, pages 1134-1149

Physical parameters and dynamical properties of the multiple star θ and

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Abstract

An analysis of the physical characteristics, orbital parameters, and dynamical stability of the multiple Be star HD 217675 (θ And) is presented. Observations on the 6-m SAO and 1.5-m RTT telescopes are used to refine the orbital parameters of the subsystems. The spectral types, absolute magnitudes, and masses of the components are estimated. The total mass of the system is $18 \pm 2 M_{\odot}$. It is shown that the configuration of the system is 2 + 2, where one of the subsystems is a spectral binary with a period of 33 d and the outer pair has a period of 117 yr. The parameters of the second inner subsystem are uncertain, making it difficult to draw firm conclusions about the stability of this multiple star. © 2010 Pleiades Publishing, Ltd.

<http://dx.doi.org/10.1134/S1063772910120061>
