

OPTICAL SPECTRAL VARIABILITY OF QUASAR E1821+643

A. I. Shapovalova¹, L. Č. Popović^{2,3}, D. Ilić³, V. Chavushyan⁴,
A. N. Burenkov¹, W. Kollatschny⁵ and A. Kovačević³

¹*Special Astrophysical Observatory of the Russian AS, Nizhnij Arkhyz,
Karachaevo-Cherkesia 369167, Russia*

²*Astronomical Observatory, Volgina 7, 11160 Belgrade 74, Serbia*

³*Department of Astronomy, Faculty of Mathematics, University of Belgrade,
Studentski trg 16, 11000 Belgrade, Serbia*

⁴*Instituto Nacional de Astrofísica, Óptica y Electrónica, Apartado Postal 51-216,
72000 Puebla, Puebla, México*

⁵*Institut für Astrophysik, Georg-August-Universität Göttingen, Germany
E-mail: dilic@matf.bg.ac.rs*

The quasar E1821+643 is an interesting object since it is suggested that it could host a binary black hole in its center. Therefore we have performed a long term (1990–2014) spectrophotometric monitoring of this object, that has been done for the first time. Here we report our major findings of the variability of the continuum and line fluxes.

We found periodical variations in the photometric flux with periods of 1200, 1850, and 4000 days, and 4500-day periodicity in the spectroscopic variations. While the continuum and line fluxes are varying during the monitoring period, the line profiles have not significantly changed, but have always a red asymmetry and broad line peak redshifted around +1000 km s⁻¹.

The obtained results are discussed in the frame of the binary black hole hypothesis (Shapovalova *et al.* 2016).

References

Shapovalova, A. I., Popović, L. Č., Chavushyan, V., *et al.*: 2016, *ApJS*, **222**, 25.