Optical monitoring and time delay determination in the gravitationally lensed quasar UM673

E. Koptelova (1,2), V. Oknyanskij (2), B. Artamonov (2), W.-P. Chen (1)
(1) Graduate Institute of Astronomy, National Central University, Taiwan
(2) Sternberg Astronomical Institute, Russia

Abstract

We present the results of a monitoring campaign of the lensed quasar UM673 in 2003 - 2008 observational seasons. The detected brightness variations in the A and B quasar components allow us to estimate the time delay between brightness variations of quasar components. From cross-correlation analysis we find that the brightness variations in component B follow the brightness variations in component A by about 145 days. We also explore the possibility of measuring the wavelength-dependent time delay between the brightness variations in the V and R bands. We find that the brightness variation in the R band may follow the brightness variation in the V band by about 13 days. We show that combination of the multiband data corrected for the wavelength-dependent time delay can help to improve the time delay analysis of the quasar A and B light curves.

Acknowledgments

The research is supported by the RFBR grant No. 06-02-16857 and by the NCS grant No. 96-2811-M-008-058.