

Radio flux variations of the quasar J1159+2914 (S5 1156+295) in 2010-2013

Gorshkov A., Ipatov A., Konnikova V., Mardyshkin V., Mingaliev M., Kharinov M.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2014, Pleiades Publishing, Ltd. Results of the observations of the blazar J1159+2914 (S1156+295) in 2010–2013 are reported. The observations were carried out on the RATAN-600 radio telescope (Special Astrophysical Observatory, Russian Academy of Sciences) at 4.85, 7.7, 11.1, and 21.7 GHz and the 32-m Zelenchuk and Badary radio telescopes of the Quasar-KVO Complex (Institute of Applied Astronomy, Russian Academy of Sciences) at 4.85 and 8.57 GHz. A flare peaked in August 2010, after which the flux density decreased monotonically at all studied frequencies. Variability on a timescale of 7 days was detected at 7.7 and 11.1 GHz near the flare maximum. The delay in the maximum at 7.7 GHz relative to the maximum at 11.1 GHz was 1.5 d, implying a Lorentz factor $\gamma = 55$ and angle of the jet to the line of sight $\theta \approx 2^\circ$ since mid-2011. Searches for intraday variability (IDV) were undertaken by the 32-m telescopes, mostly since mid-2011. Intraday variability was confidently detected only at the Badary station on November 10–11, 2012 at 4.85 GHz: the IDV timescale was $\tau_{\text{acf}} = 6$ h, the modulation index was $m = 1.4\%$, and the flux density of the variable component was $S_{\text{var}} = 126$ mJy.

<http://dx.doi.org/10.1134/S1063772914100060>
