

RATAN-600 multi-frequency data for the BL Lacertae objects

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Abstract

© ESO, 2014. Aims. We present a new catalogue of the RATAN-600 multi-frequency measurements for BL Lac objects. The purpose of this catalogue is to compile the BL Lac multi-frequency data that is acquired with the RATAN-600 simultaneously at several frequencies. The BL Lac objects emit a strongly variable and polarized non-thermal radiation across the entire electromagnetic spectrum from radio to γ rays and represent about 1% of known AGNs. They belong to the blazar population and differ from other blazars' featureless optical spectrum, which sometimes have absorption lines, or have weak and narrow emission lines. One of the most effective ways of studying the physics of BL Lacs is the use of simultaneous multi-frequency data. Methods. The multi-frequency broadband radio spectrum was obtained simultaneously with an accuracy of up to 1-2 min for four to six frequencies: 1.1, 2.3, 4.8, 7.7, 11.2, and 21.7 GHz. The catalogue is based on the RATAN-600 observations and on the data from: equatorial coordinate and redshift, R-band magnitude, synchrotron peak frequency, SED classes, and object type literature. Results. The present version of the catalogue contains RATAN-600 flux densities measurements over nine years (2006-2014), radio spectra at different epochs, and their parameters of the catalogue for more than 300 BL Lacs objects and candidates. The BL Lacs list is constantly updated with new observational data of RATAN-600.

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Keywords

BL Lacertae objects: general, Catalogs