

Determination of parameters of transit exoplanets, using data obtained at the small telescopes

V. Krushevska¹, Yu. Kuznyetsova¹, O. Matsiaka², M. Andreev^{1,3,4},
Ya. Romanyuk¹ and A. Vidmachenko¹

¹ *Main astronomical observatory of National Academy of Science of Ukraine,
27 Akademika Zabolotnoho ave., 03680 Kyiv, Ukraine*

² *Taras Shevchenko National University of Kyiv, 64/13, Volodymyrska Street,
01601 Kyiv, Ukraine*

³ *Terskol Branch of Institute of Astronomy, Russian Academy of Sciences, 81
Elbrus ave., ap. 33, Tyrnyauz Kabardino-Balkaria Republic 361623 Russian
Federation*

⁴ *International Center of Astronomical and Medical Ecological Researches,
National Academy of Sciences of Ukraine, 27 Akademika Zabolotnoho ave.,
03680 Kyiv, Ukraine*

Received: August 15, 2013; Accepted: January 17, 2014

Abstract. We present the results of CCD-photometry data processing of some stars with transiting extrasolar planets. Observations were carried out using such small telescopes: a 38-cm Cassegrain telescope K-380 (CrAO, Ukraine), a 60-cm Zeiss-600 (Terskol, Russia), a Celestron-14" (Lesniki & MAO NASU, Ukraine). The main physical and orbital parameters for specified exoplanetary systems were calculated by the Monte-Carlo method. Using obtained best-fit parameters the light curve modeling was simulated. Calculations and light curve simulation were realized using an IDL programming environment. A light curve analysis includes simulation of a transit curve shape using the analytic theory of the light curve and experimentally obtained data. A comparison of the results obtained in each of the above mentioned telescopes is presented.