

PHOTOMETRY OF SYNCHRONOUS BINARY ASTEROID (8474) RETTIG IN 2015

V. G. Chiorny¹, Yu. N. Krugly¹, V. Benishek², P. Pravec³, P. Kusnirak³, A. Galad³, J. Oye⁴, R. Groom⁴, V. Reddy⁵, D. Pray⁶, W. Cooney⁷, J. Gross⁷, R. Inasaridze⁸, V. Aivazyan⁸, V. Zhuzhunadze⁸, D. Terrell⁹, R. Montaignut¹⁰, A. Leroy¹⁰, and I. Molotov¹¹

¹ Institute of Astronomy of Kharkiv National University , Sumska Str. 35, Kharkiv 61022, Ukraine

² Belgrade Astronomical Observatory, Volgina 7, 11060 Belgrade 38, Serbia

³ Astronomical Institute, Academy of Sciences of the Czech Republic, Fricova 1, CZ-25165 Ondrejov, Czech Republic

⁴ Blue Mountains Observatory, Leura, NSW, Australia

⁵ Planetary Science Institute, Tucson, AZ 85719, USA

⁶ Sugarloaf Mountain Observatory, South Deerfield, MA 01373, USA

⁷ Sonoita Research Observatory, 77 Paint Trail, Sonoita, AZ 85637, USA

⁸ Kharadze Abastumani Astrophysical Observatory, Ilia State University, G. Tsereteli str. 3, Tbilisi 0162, Georgia

⁹ Department of Space Studies, Southwest Research Institute, Boulder, CO 80302, USA

¹⁰ OPERA Observatory, 33820 Saint Palais, France

¹¹ Keldysh Institute of Applied Mathematics, Russian Academy of Sciences, Miusskaya sq. 4, Moscow 125047, Russia

contact e-mail: *chiorny@astron.kharkov.ua*

We present photometric observations of the small main belt asteroid (8474) Rettig which were carried out in May - July 2015 in the frame of the Binary Asteroid Photometric Survey [1]. We suggested that this object could be a binary system from the observations at Kharkiv Observatory on May 19 what was confirmed in the next observations by joint project. The obtained lightcurve is a typical one for a synchronous binary asteroid (similar to asteroid (809) Lundia [2]). In results we estimated an orbital period of the binary system equal of 30.54 hours and a lower limit on the secondary-to-primary mean-diameter ratio of 0.86 [3]. Calibrated photometry of Rettig on June 8 and 10 allowed us to obtain absolute magnitude and color V-R of the asteroid. Diameters of the components of binary system (8474) Rettig were estimated. The results of photometry of Rettig and other known small synchronous main-belt binary asteroids will be discussed. References : [1] Pravec P. et al., 2012. Binary asteroid population. Anisotropic distribution of orbit poles of small, inner main-belt binaries. *Icarus*, 218, 125-143. [2] Kryszczyńska A. et al., 2009. New binary asteroid 809 Lundia. I. Photometry and modelling. *Astronomy Astrophysics*, 501, 769-776. [3] Chiorny V. et al., 2015. 8474 Rettig. CBET 4122