

NEW SEMI-AUTOMATED PHOTOMETRIC TELESCOPE AT THE SKALNATÉ PLESO OBSERVATORY. J. Svoreň¹, M. Husárik², J. Ambróz³, J. Drbohlav⁴ and J. Medek⁵, ¹Skalnaté Pleso Observatory, SK-059 60 Tatranská Lomnica, Slovakia. astrsven@ta3.sk, ²Skalnaté Pleso Observatory, SK-059 60 Tatranská Lomnica, Slovakia. mhusarik@ta3.sk, ³Skalnaté Pleso Observatory, SK-059 60 Tatranská Lomnica, Slovakia. ambroz@ta3.sk, ⁴Rtyně v Podkrkonoší 143, CZ-542 33, Czech Republic. info@dalekohledy-drbohlav.cz, ⁵Žižkova 430/1, 602 00 Brno-Veveří, Czech Republic. alab.medek@email.cz

Introduction: A semi-automated photometric telescope built at the Skalnaté Pleso Observatory is described.

The Skalnaté Pleso Observatory (Minor Planet Center Code 056) had used for many years a 0.3-m f/5 Zeiss astrograph for classical photographic astrometry of comets and asteroids [1], [2]. In December 2000, the astrograph was replaced on the same mounting by a 0.61-m f/4.3 mirror telescope equipped with a CCD camera SBIG ST-8. The change from photography to CCD, accompanied by a significant reduction of the displayed field, forced us to automatize a search and a guidance system of the telescope. A semi-automated regime for the telescope is connected with the simultaneous motion of the 4-m dome.

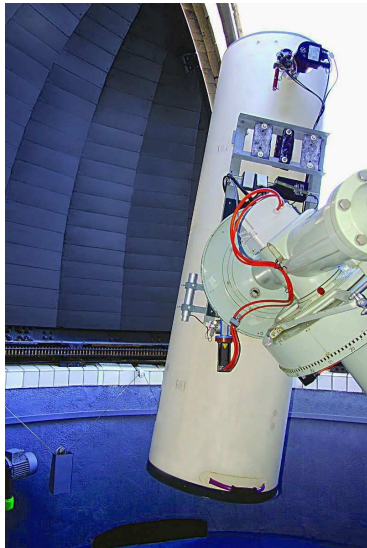


Figure 1: 0.61-m photometric reflector at the Skalnaté Pleso Observatory.

Description of the system: The new photometric system was completed in 2006 when a new powerful camera SBIG ST-10XME-Class 1 with glass BK7 was built in the Newtonian focus of the telescope. Although the telescope is only a medium-sized instrument, excellent observational conditions at the Skalnaté Pleso Observatory (1783 meters above sea level) enabled us

to measure interplanetary objects up to the 18th magnitude and the limit for stellar objects during moonless nights is far beyond the 20th magnitude.

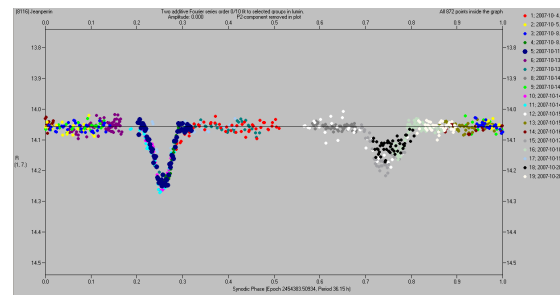


Figure 2: Photometric curve of the binary asteroid (8116) Jeanperrin. Navy-blue points – data from the Skalnaté Pleso.

Descriptions of the optical system, the search and guidance system and the basic imaging software accompanied by block diagrams, successfully used at the photometry of Near Earth Asteroids [3], binary asteroids, and Main-belt asteroids [4], are done.

References:

- [1] Svoreň, J. (2002) *Memorie Societa Astron. Italiana*, 73, 632-635. [2] Svoreň, J. (2006) *Contrib. Astron. Obs. Skalnaté Pleso*, 36, 119-124. [3] Pray, D.P. et al. (2007) *Minor Planet Bull.*, 33, no. 2, 44-46. [4] Warner, B.D. et al. (2006), *Minor Planet Bull.*, 33, no. 4, 102–103.