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New face of the Borowiec Satellite Laser Ranging Station

Borowiec Satellite Laser Ranging Station (BSLRS) belongs to the Space Research Center of the Polish Academy of Sciences (SRC PAS). Due to serious failure of the laser BSLRS was offline for several years since March 2010. In the year 2014 the Borowiec SLR system was modernized. A new optics was replaced in the transmitting-receiving telescope including primary and secondary mirrors of the telescope and special dielectric mirrors transferring laser pulse from laser unit to telescope. Two high-energy Nd:YAG pulse laser modules were installed, the standard unit used for laser observations of all satellites equipped with retroreflectors (EKSPLA PL-2250) and high-energy module (Continuum Surelite III) dedicated to laser observations of space debris. Both lasers are fully operational. Additionally, a high-speed start Si photodiode FDS025 was exchanged, working in the range 400-1100 nm. The other elements of the system were not changed. In April 2016 Borowiec successfully completed quarantine procedure and all results of the station were released to the public area after February 1, 2016. BSLRS works at night mode and tracks all LEO satellites from ILRS list + L1/L2. Station is very active in the frame of Space Debris Study Group (SDSG). In the last few months, Borowiec has participated in several campaigns of space debris objects like ENVISAT, TOPEX/Poseidon and JASON-1. At presents, new campaigns are in progress (e.g. OICETS, ERS). Moreover, a few typical rocket bodies were observed as well. Some sample results will be presented for both laser modules.