About Current Status of Katzively SLR Station

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Abstract

Upgrades and achievements that took place over the last few years on the SLR station Katzively-1893 along with its current capabilities are listed in this paper.

In the late 2005 our station received a new Russian YAG:Nd laser made in "Poljus" Research Institute (pulse width about 250 ps, repetition rate 2–10 Hz, output energy approximately 50–100 mJ, output wavelength 532 nm). Introduction of user-friendly interactive time-table in 2006 allowed observers to schedule passes for the whole night in the evening and quickly switch from one satellite to another in the case of necessity. In the beginning of 2008 old photomultiplier Hamamatsu H6279 was replaced with more sensitive H6780. Due to these upgrades our station significantly increased satellite ranging data quantity and crossed ILRS quantity baseline for LEO and HEO satellite passes. During first nine months of 2008 in spite of station building renovation that spoiled about 40 cloudless summer nights we managed to observe 1311 passes of 27 satellites from CHAMP (350 km) up to GIOVE (24500 km).

In spring 2008 we have installed simplified program packages for ephemeris preparation and for processing of ranging results, so nowadays most of our observers can send normal points to data centers as soon as there would be a little break between passes. It has essentially reduced the data delivery latency.

After installation of CCD camera onto the main guide of the telescope in 2007, our system became more eyesafe for operators, though there left optical paths with open laser radiation yet.

At present our observers work in couples in three shifts, 7 nights per week. Because of the absence of angular encoders our station can range satellites only in nighttime when they are not eclipsed.

Although most of our measuring equipment was made more than 20 years ago (except for SR-620 which is 10 years old), personnel of our station makes efforts to improve the SLR data quality performing maintenance repairs and adjustments of our devices in order to meet international guidelines.