

A LASER-PHOTOMETRIC OBSERVATIONAL COMPLEX OF THE ODESSA ASTRONOMICAL OBSERVATORY

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ABSTRACT. The creation of a laser-photometric complex for AES observations, which enters into the net of laser-location AES observations on the territory of the Ukraine, nears completion at Kryzhanovka Station of the Odessa Astronomical Observatory. The station is equipped to meet high standards and permits successfully carrying out works within the frames of international projects.

Key words: Artificial satellites

At the astronomical station Kryzhanovka, the construction of a laser-photometric complex for AES observations nears completion. The complex incorporates:

1) an 80-cm Ritchey-Cretien reflecting telescope on the altazimuthal mounting from the fast cinetelescope SKT 1-70. as a light-detector apparatus a pulse-counting photometric photometer-polarimeter is manufactured and placed in Cassegrain focus, the prime focus being designated for the matrix TV camera. The program is changed by positioning the secondary Cassegrain mirror to the meniscus corrector for prime focus. The instrument is designed for photometric and position observations of AES.

2) Laser telescope TPL-1M with 1m-primary mirror in diameter designed for laser-long range observations of geodetic Lageos-type AES as well as geostationaries.

3) A modernized laser-long range set of LD-2-type for navigation AES observations.

4) Tracking system KT-50 with a count-pulsing photometer for recording AES light variations.

The complex incorporates a complement of time service apparatus.

The 80-cm telescope is erected in an observatory tower having a dome 6 m in diameter. There are special premises for apparatus and a work-room, these together with the observatory tower constitute the whole architectural ensemble.

Laser telescope TPL-1M is housed in the building 9x9 m in size with a common roof rolling away. It accomodates rooms for an operator, recording and control apparatus and a laser. To the building is attached a 6 × 9m flank for making reduction of observations.

The laser set LD-2 and electrophotometer on the tracking system KT-50 are mounted in two housings of the whole pavillion of prefabricated metal constructions and in special premises for apparatus. The roof rolling away consists of two halves for each instrument separately.

In July 1995 the Ukrainian aero-geodetic enterprise of the Main management for geodetics, chart-making and cadastre at the Soviets of Ministers of the Ukraine related the site in Kryzhanovka to the International net of GPS (item N 17). Kryzhanovka station, Odessa Astronomical Observatory, enters into the laser-location AES observations net organized according to the project of Ministry of Education of the Ukraine. Putting into operation the given laser-photometric complex for AES observations will permit the Odessa Astronomical Observatory to participate in the works carried out within the frameworks of different international project and programs.