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Groundbased complex for checking the optical system of the TUS experiment

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The purpose of the TUS space experiment is to study cosmic rays of ultrahigh energies by registration of the generated extensive air showers using a satellite in space. The concentrator located on the satellite is made in the form of a Fresnel mirror directed toward the earth's atmosphere, and at its focus there is a photodetector. The angle of view of the mirror is ± 50 , that for the set height of the satellite's orbit corresponds to an area of 80×80 km² on ground. A ground complex consisting of a number of stations is being constructed in order to control the optical system of the experiment (the number of stations and their location will be determined with account of the satellite's actual orbit after it is launched). Each station consists of a light source, an optical system forming a light beam, a GPS receiver and a microcontroller, that generates a sequence of light signals in time and controls the led driver. The work is supported by the RFBR grant 15-02-05498.

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