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ABSTRACT BOOK

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USING OF OPTICAL MEANS AND METHODS IN RI NAO FOR OBSERVATION OF NEAR-EARTH SPACE OBJECTS

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Since 2000 year a new methods for Earth orbit object observations have been developed in RI NAO. They use combination of different operation modes of CCD camera. Several telescopes with diameters from 50 to 500 mm were made in RI NAO to implement the combined method. All telescopes equipped with the necessary units and mechanisms to provide operation in automatic mode with remote control.

The telescopes of RI NAO provide observations of artificial space objects in low (200 – 2'000 km), middle (2000 – 36'000 km), geosynchronous (36'000 km) and highly elliptical (apogee > 36'000 km) orbits, as well as NEO during the time of close approach to the Earth (r<0.05 AU) and meteors in optical band (~100 km).

RI NAO successfully participates in the functioning of the Space Situation Monitoring and Analysis System conducted by State Space Agency of Ukraine, as well as in international projects of asteroid and comet hazard and space debris monitoring.

DETERMINING THE COORDINATES OF METEOROID TRAIL BY TWO SEPARATED FM RECIEVERS

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A system of two distant sites for observation of forward scattering of radio wave from meteor trail is considered. The method for determination the coordinates of the reflection signal point from the meteoroid trail is proposed. These coordinates are determined from the difference of time arrival of signal, scattering from meteor, to distant sites, and the bearing of both the azimuth and the elevation in one of the distant sites. The estimation of the control zone location for radio path Kielce (Poland) - Nikolaev is carried out. Earth's curve is taken into account to determine the reflection signal point.