STATE AGENCY ON SCIENCE, INNOVATION
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RESEARCH INSTITUTE “NIKOLAEV ASTRONOMICAL OBSERVATORY”

ASTRONOMICAL RESEARCH: FROM NEAR-EARTH SPACE TO THE GALAXY

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ABSTRACT BOOK

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These problems require a solution at this preprocessing stage, since their contribution to the final error is quite high and often difficult identification of ruler lines, as well as images of the observed objects.

At the current stage of work after the correction of plate grid, the image is saved in standard FITS format for calculating the object coordinates by existing programs. In the future, to get more precise coordinates of the objects, we are going to create an interface for transmitting the raw coordinate information of objects into other software developed in NAO.

The first tests of this method and software, produced using the plate with the Pleiades open clusters, showed positive results.

FORMATION OF CATALOGUE OF GEOSYNCHRONOUS OBJECTS IN RI NAO

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The catalogue of the orbital elements of geosynchronous objects was generated from observation results obtained in the period of 2008-2010. Observations were carried out by the combined CCD observation method at Fast Robotic Telescope. The catalogue contains orbital elements of 67 objects. The orbital elements were used to calculate ephemerides on the interval from 2 to 200 days. The comparison of calculated ephemerides with new observation results was made. This made possible to estimate the calculation error of ephemerides and the necessary term of new observation.

The software for generation of geosynchronous objects observation list was developed, which consider the analysis of obtained results. The conception of Internet site for catalogue presentation was developed.

OBSERVATIONS OF NATURAL AND ARTIFICIAL OBJECTS IN NEAR-EARTH SPACE USING THE COMBINED OBSERVATION METHOD

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Near-Earth objects, such as artificial satellites and potentially hazardous objects are difficult for optical astrometry observations. High