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Measurements (1)

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PROMISING ISON TELESCOPE TO IMPROVE THE COMPLETENESS AND ACCURACY OF THE
CATALOG FOR HIGH ORBIT OBJECTS**Abstract**

Interagency International Scientific Optical Network (ISON) represents one of largest systems specializing in observation of space objects. ISON provides permanent monitoring of the whole GEO region, regular surveying of the Molniya type orbits, and tracking of objects at GEO, GTO, HEO and LEO.

Few steps plan of the ISON network development have been finished. Currently ISON cooperates with 38 observation facilities of various affiliations with 90 telescopes in 15 countries. Six telescope subsets have been completed to the date.

Almost 19 millions measurements for about 5067 objects (2094 GEO, 2635 HEO and 338 MEO objects) have been collected in 2016. 339 new faint objects were discovered and 307 previously lost rediscovered in 2015, 550 new faint objects were discovered and 480 previously lost rediscovered in 2016. This means that catalog maintenance is stable for respectively bright objects only - faint objects are regularly lost and then rediscovered. Other problem of the KIAM catalog is connected with HEO objects that are observed in around apogee area mainly and therefore the accuracy of its orbits is not too high in average.

Therefore KIAM have been started the elaboration of new telescope for panoramic survey. The 10-element cluster of 40-cm aperture telescopes must provide common oblong field of view as 6x90 degree. It is planned that the optical barrier will be oriented along GEO orbit so that provide quasi-continuously observations of all GEO-object with small inclination. Herewith significant part of other GEO-objects with brightness down to 17 star magnitude must cross this barrier during the night. Also it is expected that many HEO objects will be crossing this barrier in both apogee and perigee areas that will result the improving the accuracy of its orbits.

The prototype (6-elements cluster of 20-cm aperture telescope with common oblong field of view as 4.5x42 degree) is close to completion to verify the correctness of the implementation of new telescope idea.