

ASPIN – ASTEROID RESEARCH PROJECT OF THE ISON OPTICAL NETWORK. I. Molotov^{1,2}, V. Agapov^{1,2}, Yu. Krugly³, L. Elenin^{1,2}, ¹Keldysh Institute of Applied Mathematics RAS, Miusskaya sq., 4, Moscow, 125047, Russia (molotov@kiam1.rssi.ru), ²Astronomical Scientific Centre “Project Technics”, JSC, Svobodi str., 35-22, Moscow, 125362, Russia (im62@mail.ru), Astronomical Institute of Kharkiv Karazin National University, Sumska Str. 35, Kharkiv 61022, Ukraine (krugly@astron.kharkov.ua).

Introduction: International Scientific Optical Network (ISON) [1] represents one of largest systems specializing in observation of space objects. ISON project was started in 2001 having main goal the space debris observations. It joins now the 27 observation facilities in 12 countries with 42 telescopes of different class (aperture from 19 cm to 2.6 m). ISON project provides support to photometry observation programs for the near-Earth asteroids (NEA) since 2005 [2]. ISON asteroid workshop was arranged in Andrushivka observatory in November 2009 where it was decided to establish own NEA survey program and to improve the work on photometry under ASPIN (Asteroid Search and Photometry Initiative) project [3].

Directions of works: ASPIN supports now two asteroids survey programs performing by Andrushivka Observatory (MPC code A50) and ISON-NM remote observatory (MPC code H15). In addition, 1-m Schmidt telescopes of Byurakan Astrophysical Observatory (Armenia) is under modernization now (lens corrector, large CCD camera, mount automation) with the goal to obtain FOV of 2.6x2.6 degree. Upon the work completion, the instrument will be spending part of observation time for NEA searching. The program on NEA photometry observation headed by the Astronomical Institute of Kharkiv Karazin National University is carried out with involvement of 1.5 m telescope at Maidanak (Uzbekistan), 1.25 m telescope in Abastumany (Georgia), 1-m telescope in Simeiz (Ukraine), 0.7 m telescopes in Chuguev (Ukraine), Lesniki (Ukraine), Gissar (Ukraine), and Abastumani (Georgia). In addition the modernization of three 60 cm telescopes (lens corrector, mount automation, dome repairing) in Sanglok (Tadjikistan), Maidanak (Uzbekistan) and Tarija (Bolivia) will be finished in 2012 that will permit to involve them into the above mentioned program. Moreover, dedicated subset of several telescopes (40 cm - 50 cm) is forming to provide quick reaction on the Gaia-produced alerts [4] and to perform follow-up observations of NEAs discovered by ISON observatories. Appropriate work is carrying out in Ussuriysk, Blagoveschensk and Kislovodsk (Russia), Tavan Talgot (Mongolia), Kitab (Uzbekistan), Castelgrande (Italy). Part of the observation

time at these telescopes will be spent for performing NEA photometry measurements.

Prospects: Three telescopes of 50 cm class and one 65 cm aperture telescope for NEA surveys are in production now. Possible places for installation are under investigation now. Maidanak (Uzbekistan), Kislovodsk (North Caucasus, Russia), Sutherland (South Africa), Macon (Argentina), and San Pedro Martir (Mexico) are under consideration. Also, the production of 1.25 m telescope shall begin in 2012. The possibility to restore 1-m telescopes in Tadjikistan, Uzbekistan and Kazakstan for NEA photometry is under consideration. In addition, the producing of low-cost 40 cm telescopes for NEAs follow-up is under arranging. Moreover, 6 observatories for space debris observations are produced already and have to be installed in Russia, Armenia, Venezuela, Mexico and, possibly, in South Africa and Argentina. Their 40 cm and 65 cm telescopes will be able to spend part of time for the ASPIN project.

References: [1] Molotov I. et al. 2008. *Advances in Space Research*, 41, 1022-1028. [2] Krugly Yu. N. et al. 2007. *Proceedings of the IAU Symposium 236*, 385-390. [3] Molotov I. et al. 2010. *38th COSPAR Scientific Assembly*, B04-0088-10. [4] Krugly Yu. N. et al. 2011. *Proceedings of the Workshop Gaia Follow-up network for the Solar System Objects*, 101-104.