

Preface

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The significance of the asteroid and comet hazard (ACH) problem was seriously reappraised at the turn of 20th and 21st centuries. This problem (danger of the Earth's encounter with small bodies of the Solar System) was for a long time a subject of studies for a small part of specialists. At the present time it is much wider recognized (including governments of many countries and United Nations) as a complex global problem standing before mankind. Such a dramatic change has the following causes. Firstly, a large body of fundamental data has been accumulated about small bodies of the Solar System and about dynamical and physical evolution of this population, in particular, about mechanisms of replenishment of the population of hazardous bodies, frequency of their collisions, etc. This has occurred due to appearance of new observation technologies and realization of special observation programs. Recognition of the fact that we do know too little about this quite real cosmic hazard has become an important result of this knowledge, producing scientifically-grounded anxiety. Secondly, technological component of our civilization is developing so intensely that, curiously enough, the mankind becomes more and more vulnerable to cosmic hazards. Our planet is covered by gas pipelines, new dangerous factories, nuclear power plants, and other objects appear. Therefore, the risk of grave consequences as a result of fall of an asteroid or comet on the Earth becomes much more substantial than, say, only one hundred years ago. Because of this, the hazard associated with possible incidence of large celestial bodies on the Earth should be considered very seriously. In the inevitable cases of explicit hazards one must be ready to prevention of catastrophe or mitigation of damage.

Special conferences of national and international levels are dedicated to the ACH problem. Political

aspects of this problem are discussed at annual meetings of the Scientific and Technical Subcommittee and Legal Subcommittee of the UN Committee on the Peaceful Uses of Outer Space. A special working group (Action Team 14) is established by the Committee for coordinated elaboration of concerted approach to solution of this global problem.

In this issue of the *Cosmic Research* journal we publish reports presented at the “International Symposium on Near-Earth Hazardous Asteroids”, October 12–16, 2009, Malta. The symposium was organized by the Russian Academy of Sciences (mainly by the staff of the Space Research Institute) under the auspices of the RF Ministry of Science and Education and by the European Space Agency (more exactly, by the directorate of recently started European program Space Situational Awareness, SSA). In addition to Russian participants and experts from EU countries, specialists from the USA and Saudi Arabia attended the symposium. The goals of the symposium included exchange of information about investigations carried out on the subject and, which is especially important, discussion of possible concrete ways of collaboration.

Participants of the symposium especially appreciate the courtesy of S.Yu. Medvedev, director of Maltese Russian Center of Science and Culture and his staff who not only provided for the necessary venue for organizing the symposium, but also ensured all conditions for creating friendly atmosphere, so favorable for effective discussions.

*Director of the Space Research Institute
of the Russian Academy of Sciences,
Academician L.M. Zelenyi
Director of the Institute of Astronomy
of the Russian Academy of Sciences,
Corresponding member of RAS B.M. Shustov*