To the participants of the "Ground-Based Astronomy in Russia. 21st Century" All-Russian Conference

## Dear Colleagues!

The Astronomy Research Council of the Russian Academy of Sciences cordially welcomes you and wishes you success in participating in this wonderful conference dedicated to the memory of the world's famous scientists: Full Member of the Russian Academy of Sciences, laureate of the Russian Federation State Prize—Dmitry Alexandrovich Varshalovich and Professor, laureate of the A.A. Belopolsky Prize of the Russian Academy of Sciences— Yuri Nikolaevich Gnedin.



The Full Member of RAS, Dmitry Alexandrovich Varshalovich, is an outstanding astrophysicist and cosmologist, who has made great contribution to a number of fundamental fields of physics and astrophysics. He discovered a new astrophysical phenomenon: alignment of the spins of atoms and molecules in the rarefied space medium due to the resonance scattering of anisotropic emission fluxes. He performed the fundamental works that laid the foundations for the theory of galactic masers. The monograph "Quantum Theory of Angular Momentum" written by D. A. Varshalovich together with A. N. Moskalev and V. K. Khersonskii became widely known.

Dmitry A. Varshalovich is a brilliant theoretical physicist, an internationally recognized scientist, who has devoted his whole life to selfless service to his beloved science.

We should especially note two of his many outstanding scientific results: his work on the discovery of molecular hydrogen clouds formed at the early stages of evolution of the Universe and his work on determination of the primary deuterium abundance. On this basis, he obtained an outstanding result: he has done an independent estimation of the fraction of the baryonic matter in the Universe.

Dmitry A. Varshalovich also obtained a number of important results on studies of possible cosmological variations of fundamental physical constants. For his scientific achievements, D. A. Varshalovich was honored with a number of prestigious awards including the State Prize of the Russian Federation. As the head of the theoretical astrophysics department of the Ioffe Physical-Technical Institute, Dmitry Varshalovich has educated brilliant scientific school that has won worldwide recognition.

We all knew and loved Dmitry Alexandrovich, a remarkably kind, sympathetic person obsessed with science. Communication with him has always been extremely interesting and fruitful. It is encouraging that many papers which will be presented at our conference are in the mainstream of Dmitry Alexandrovich's scientific interests.

The whole life of Yuri Nikolaevich Gnedin was devoted to selfless service to such a wonderful science as astrophysics. He carried out pioneering works on the theory of the cyclotron line formation in the X ray spectra of accreting neutron stars which are the basis of the main method for determining the magnetic fields of these relativistic objects. He completed a cycle of remarkable works on the theory of polarization of emission from astrophysical objects. For these works, he was awarded the A.A. Belopolsky Prize of the Russian Academy of Sciences. He developed a new method to measure the magnetic fields of astrophysical objects based on taking into account the Faraday rotation of the polarization plane during the scattering of electromagnetic radiation. This method formed the basis for the determination of magnetic fields and rotation velocities of supermassive black holes in active galactic nuclei carried out in recent years by Yu.N. Gnedin and his colleagues. It is remarkable that this important astrophysical issue was formulated and realized by Yuri Nikolaevich from observations with our 6-meter telescope. Yuri Nikolaevich, as a theoretical physicist, made great contribution to the issue of detecting new elementary particles that can be carriers of the dark matter in the Universe. As a multi-skilled astronomer, Yuri Nikolaevich made important contribution into a number of other areas of astrophysics also.

Yuri Nikolaevich, on behalf of the Presidium of the Russian Academy of Sciences, worked for a long time as the chairman of the Russian Telescope Time Allocation Committee of the Russian Federation. Under his leadership, important works were carried out on setting Russian and international observation tasks and their implementation on the 6-m BTA telescope and other large telescopes in our country. For a long time, Yuri Nikolaevich was the Deputy Director of the Main Astronomical Observatory of the Russian Academy of Sciences and contributed to the development of astrophysical research at this world-famous observatory. In



particular, he supported the installation of the Russian telescope with the 1.1-m mirror in the mountains of Italy.

As a brilliant teacher, Yuri Nikolaevich gave a number of lecture courses for students of the St. Petersburg Polytechnic University for a long time. He trained half a dozen PhDs and Doctors of science. He is the author of over 300 scientific works including 4 monographs.

Yuri Nikolaevich possessed the remarkable and absolute honesty and human decency and was infinitely in love with scientific creativity. We all, his colleagues and friends, respected and loved him.

The fact that the conference is dedicated to the memory of such outstanding scientists as Dmitry Aleksandrovich Varshalovich and Yuri Nikolaevich Gnedin gives hope that the ideas of these two excellent scientists will be preserved and developed in the next generations of young astronomers.

Chairman of the Astronomy Research Council of the Russian Academy of Sciences, Full Member of RAS

A. M. Cherepashchuk