

**Vladimir Fortov, LOC deputy chair (President of the Russian Academy of Sciences)**

I am privileged and pleased to invite you to Russia in August 2014 to participate in the 40th COSPAR Scientific Assembly, held at Lomonosov Moscow State University in close cooperation with the Russian Academy of Sciences.

Space research is probably among the most multifaceted branches of science, involving virtually every area as well as technology and engineering. Advances in space research open new horizons in our views of nature and the Universe, thus boosting further scientific development and providing one of the greatest sources of inspiration for the next generations of scientists.



**Vladimir Fortov (Photo: Presidium of the Russian Academy of Sciences)**

The Russian Academy of Sciences has been deeply involved in space research since its advent in 1957 and even before, when Mstislav Keldysh, one of the Academy's leaders and later the president of the Academy, began his works in support of the newly born rocket and space industry. He was one of those visionaries who foresaw the great future of close interaction between science and space technology and thus dedicated much of his efforts to the development of the initial scientific program of the USSR. These efforts included a vast range of experiments, from relatively small spacecraft in near-Earth space to full-fledged planetary missions and, last but by no means least, manned expeditions.

Since then, space has remained among the top priorities for the Russian Academy of Sciences. Our institutes and research organizations participate in most robotic and manned space science missions

within the state Federal Space Program framework. The most recent success is the RadioAstron space observatory which exploits the idea of space-borne radio interferometers, which first emerged in discussions within institutes of the Academy after especially fruitful experiments with very-long-baseline interferometers located on the Earth. Another example is the long-term Plasma Crystal experiment investigating the behaviour of ionized dust in microgravity. This joint Russian-German experiment started in 2001 on board the International Space Station after a series of earlier experiments on board the Mir Station.

The Academy is also an active participant in international space missions. Besides collaboration on the ISS, Russian instruments made in the laboratories within the Academy and embarked on international missions discovered 'wet' regions at the poles of the Moon and Mars, opening a new page in research and exploration of these space bodies.

In addition to these endeavours the Academy has developed its own program of space research which supplements other missions as well as provides targeted data in areas currently underexplored, both for scientific and public benefit. As part of this program a series of small satellites has been developed for various purposes with the first one, Chibis-M, already in operation. For example, Chibis-M monitors the lightning activity of the Earth in order to solve the long-lasting puzzle of what causes lightning discharges and what impact they can have on human infrastructure. One of the next satellites in this series will be used to monitor trace gases whose contribution to the greenhouse effect and climate change is still poorly understood.

Space science may sometimes be done on the Earth as well as above our heads. The recent fall of the meteorite near Chelyabinsk attracted general attention to the small bodies in our nearest neighbourhood. The Academy immediately responded to the event by sending a special expedition to find the traces of the impact and to estimate the parameters of the meteorite. The first results are already published; still, closer scrutiny might reveal new information which will be duly presented at the Assembly.

Besides supplying scientists with new data the Chebarkul event has also shown the importance of public awareness about space. As a public organization the Academy sees its mission as spreading knowledge throughout society. It is of great importance that the achievements of space research can be routinely applied to earthly matters, be they health care, improved weather forecasting, or just a better understanding of our Universe as taught at schools and universities. Furthermore, we fully appreciate the great impetus which COSPAR

Assemblies can give to new generations of researchers, and many students and young Russian scientists will actively participate in the Moscow meeting.

We are looking forward to hosting the 40th COSPAR Scientific Assembly, one of the most representative events in space science and a great opportunity to exchange ideas, projects, and achievements with the entire community involved in space research.

Once before, in 1970, the Assembly was held in Russia, then the USSR, in St. Petersburg, then Leningrad. Political matters often hindered closer cooperation between scientists even though space research was even then one of the most international fields of science. This situation has changed. Fostering new ideas and bringing them to life is no longer possible in isolation; the more sophisticated the experiments are, the wider discussion must be to estimate the significance of new results and the feasibility of new projects. COSPAR Scientific Assemblies offer everyone involved the most favourable environment for the collaboration necessary to further development in space research.

Now, more than 40 years later, we are delighted to welcome the participants of the Assembly to the capital of Russia and hope that you will enjoy not only the scientific outcome of the meeting but also your stay in Moscow in the summer of 2014!