«Scientific events in the field of space sciences, carried out by the Russian Academy of Sciences in 2007 year»

Alexander Alferov
Ph.D.,Scientific Secretary of the RAS Space Council

Russian Academy of Sciences

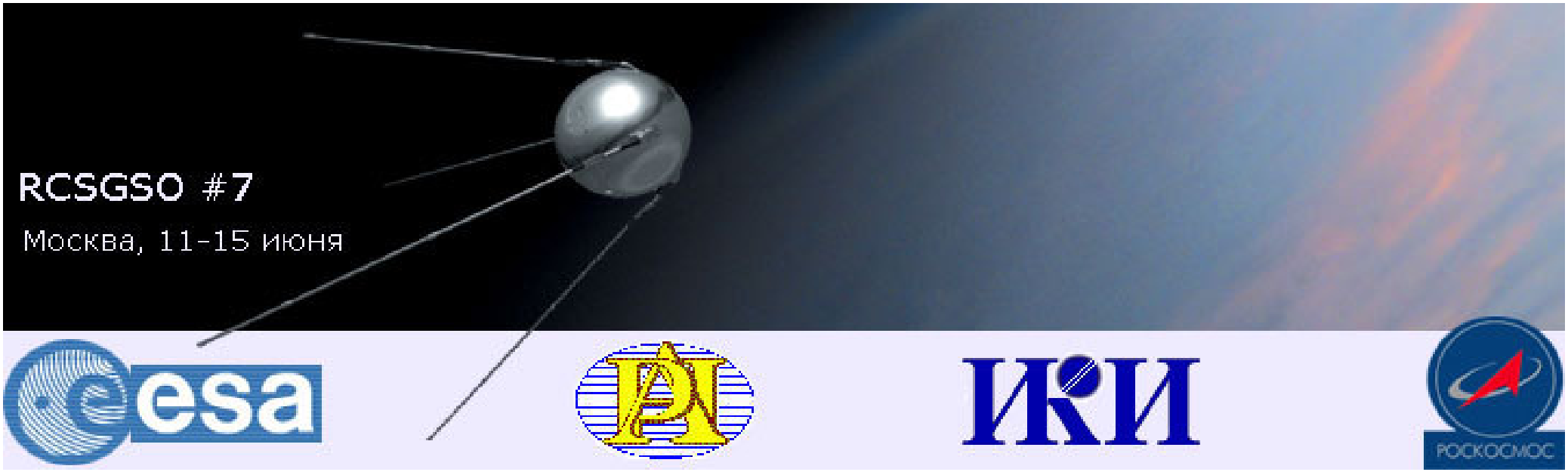
In accordance with the Plan of events devoted to the celebration 50th Anniversary of First Eath Artificial Satellite Launch, of 100th Anniversary of S.P. Korolev, 150th Aniversary of K.E. Tsiolkovsky in 2007 year a number of other scientific events were held by the Russian Academy of Sciences, those are:

- **7th International Symposium Reducing the Costs of Spacecraft Ground Systems and Operations (11 - 15 June 2007 , Moscow, Russia)**
- **Workshop on the Use of Micro-Satellite Technologies for Environmental Monitoring and Impact to Human Health (3-7 September 2007, Tarusa, Russia)**
- **INTERNATIONAL FORUM «SPACE: SCIENCE AND CHALLENGES OF THE XXI CENTURY» (2-5 October 2007, Moscow, Russia)**

Russian Academy of Sciences

7th International Symposium Reducing the Costs of Spacecraft Ground Systems And Operations (RCSGSO)

(11 - 15 June 2007 , Moscow, Russia)



RAS / ESA

Continuing the highly successful series of Symposia on Reducing the Costs of Spacecraft Ground Systems and Operations (RCSGSO), the 7th International Symposium was hosted by the Space Research Institute of the Russian Academy of Sciences (IKI) together with the Federal Space Agency of Russia, in Moscow, Russia, from 11 to 15 June 2007. The Symposium was co-organised by IKI and the ESAs Directorate of Operations and infrastructure, and was supported by the major Space Operations Organisations, including Space Agencies and Industry.

The 7th RCSGSO was one of the major events in a series of scientific conferences and celebrations to commemorate 50th anniversary of the launch of the Russian Sputnik (October 4th 1957) which marked the beginning of the Space Era and opened new civilisation Frontiers to humankind.

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The topics (RCSGSO) covered range from programmatic aspects to detailed design of:

- **TT&C Systems**
- **Mission Planning**
- **Ground Communications**
- **Multi-mission Support**
- **Autonomous Mission Operations**
- **SW Development & Maintenance**
- **New Technology for Operations**
- **Standardization**
- **Low Cost Mission Operations Concept**
- **Flight Dynamics and Navigation**
- **Global Networks for Space Operations.**

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Participants of the VII th International Symposium on Reducing the Costs of Spacecraft Ground Systems and Operations

(125 participants from 14 countries)

103 papers were presented and discussed at the Symposium

(4 Plenary and 99 Section reports)

RAS / ESA

Participants of the VII th International Symposium on Reducing the Costs of Spacecraft Ground Systems and Operations

(the numerator shows the number of the participants,
the denominator shows the number of the presented papers)

Russia –25/25	Great Britain – 8/1	Israel –2/0	Italy –9/5	Spain –6/4	France –13/10
Germany –9/22	Netherlands –5/1	China –2/2	Latvia –1/0	Norway –5/1	Austria –1/0
USA –28/20	Canada –3/3	Denmark –1/0	Belgium –2/0	Sweden –1/0	Japan –4/3
Czech Republic – 0/1	India –0/3	Switzerland –0/1	Bulgaria –0/1	Luxembourg –0/1	

RUSSIA /UN /ESA

B. United Nations/Russian Federation/European Space Agency/ Workshop on the Use of Micro-Satellite Technologies for Environmental Monitoring and Impact to Human Health (Tarusa, Russian Federation, 3-7 September 2007) Organized in cooperation with and hosted by the Russian Academy of Sciences

RUSSIA / UN /ESA

Participants of the Workshop (45 participants from 12 countries)

RUSSIA / UN / ESA

Special Design Office of Space Instrument-Making of the Space Research Institute of the Russian Academy of Sciences

(http://tarusa.ru/skbkp1/skb.htm)

RUSSIA / UN / ESA

HOTEL «INTERCOSMOS»

RUSSIA / UN / ESA

Objectives and expected results:

The prime objective of the Workshop was to provide participants with knowledge in the use of micro-satellite technologies in detecting potentially dangerous and catastrophic phenomena on the earth's surface, in the atmosphere, ionosphere and magnetosphere.

The participants learned about:

(i) payload concept and instruments, including efficiency benefits;

(ii) the infrastructure required to connect the medical centre of excellence with remote hospitals.

RUSSIA / UN /ESA

Programme of the Workshop

- use of micro-satellite technologies for environmental monitoring and space education;
- payload for detecting potentially dangerous and catastrophic phenomena on the earth's surface, aerospace biomedicine and biology issues health early warning issues magnetic field influence on people with heart problems;
- development of the new methods of experimental studies of the Earth and near-earth outer space with the use of up-to-date
- monitoring greenhouse gases (CO2) and catastrophic phenomena on the surface, in atmosphere and ionosphere of the Earth
- national and regional telemehealth programmes in participating countries
- follow-up projects/activities

RUSSIA / UN / ESA

Mr. Viktor KOTELNIKOV, United Nations Office for Outer Space Affairs pointed out the main focus of the workshop to the participants regarding the role of Micro-satellites in providing facility for earth ecology situation, natural disaster management and human health development etc.,

RUSSIA /UN/ ESA

Klimov S.I. - Chairman of Programme Committee, Space Research Institute of the RAS mainly focused on:

- Issues and concerns on micro-satellite design, manufacturing, testing and cost.
- Issues and concerns on micro-satellite applications.
- Potential application opportunities of micro-satellites.
- Application of micro-satellite technologies in providing medical services to remote regions, micro-satellite-assisted health services.
- Use of micro-satellite technologies for Earth observations and environmental monitoring, such as natural disasters and space debris, that could impact human livelihood.

RUSSIA / UN / ESA

LIST OF PARTICIPANTS

United Nations/Russian Federation/European Space Agency/ Workshop on the Use of Micro-Satellite Technologies for Environmental Monitoring and Impact to Human Health

(the numerator shows the number of the participants,the denominator shows the number of the presented papers)

Russia32/23	Bulgaria 4/2	Argentina 1/1	Hungary 2/1	India 1/1	Belgium 0\1
Malaysia 1/1	Poland1/1	Uzbekistan 1/1	Ukraine 1,1	Netherlands0/1	Columbia 1/1

(45 participants from 12 countries;
36 papers were presented and discussed at the Workshop)

RUSSIA / UN / ESA

LIST OF SESSIONS
UN/Russia/ESA Workshop on the Use of Micro-Satellite Technologies for Environmental Monitoring and Impact to Human Health:

- **Session 1. Micro-satellite platforms (Chairman – Prof. S.I. Klimov, Russia)**
- **Session 2. Applications Improve Human Health (Chairman – A.V. Alferov, Russia)**
- **Session 3. Application Programs and International Activities (Chairman – V. A. Kotelnikov, UN/OOSA)**
- **Session 4. Applied Research (Chairman – F. Menicocci, Argentina)**
- **Session 5. Micro-satellite systems (Chairman – P. Getsov, Bulgaria)**
- **Session 6. Group Discussion**
- **Session 7. Micro-Satellite Education and Research.**

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INTERNATIONAL FORUM «SPACE: SCIENCE AND CHALLENGES OF THE XXI CENTURY»

(2-5 October 2007, Moscow, Russia)

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To the Participants in the International Forum «Space: Science and Challenges of the 21st Century»

Sergei B. Ivanov
First Deputy Chairman of the Government of the Russian Federation

Academician Yuri S. Osipov
President
Russian Academy of Sciences

Anatoly N. Perminov
Head Federal Space Agency

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Academician
Viktor A. Sadovnichy
The President of the
Russian Union of Rectors
Rector of Lomonosov
Moscow State University

Lev M. Zelenyi
Associate Member of the Russian
Academy of Sciences,
Deputy Chairman of the FORUM
Organizing Committee
Director of the Space Research Institute of
the Russian Academy of Sciences

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LIST OF PARTICIPANTS INTERNATIONAL FORUM «SPACE: SCIENCE AND CHALLENGES OF THE XXI CENTURY»
(2-5 October 2007, Moscow, Russia)

Russia (500)	Great Britain (2)	Poland (1)	Italy (5)	Spain (3)	France (7)
Germany (13)	Hungary (5)	Finland (7)	Bulgaria (8)	India(2)	USA (18)
Ukraine (10)	Hellas (1)	Armenia (1)	Belgium (4)	Sweden (2)	Japan (3)

(more 1000 participants from 18 countries were presented and discussed at the INTERNATIONAL FORUM)

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Topical conferences and symposia «INTERNATIONAL FORUM «SPACE: SCIENCE AND CHALLENGES OF THE XXI CENTURY» (October 2-3):

- **The exhibition «Space science – Past and Future» (IKI RAS)**
- **Symposium «Solar system exploration» (IKI RAS)**
- **Conference «Relativistic astrophysics and radioastronomy» (IKI RAS)**
- **Conference on Plasma Phisics (IKI RAS)**

The 46th Vernadsky/Broun Mikrosymposium on Comparative Planetology (V.I. Vernadsky Institute of Geochemistry and Analytical Chemistry RAS)

- **Symposium «Cosmic rays and Radiation Environment of the Earth» (Moscow State University)**
- **Conference «Remote sensing of the Earth from the space» (VNIEM)**
- **Conference « Studies of the Earth and the near Earth environment using the satellite tracking data» (Institute of astronomy of the RAS)**
- **Conference «Solar research and innovation methods in satellite instruments» (Moscow Engineering Physics Institute,)**
- **Conference « «50th anniversary of the Space era» (Presidium RAS)**
- **Conference « Planetary rovers and exploration of celestial bodies» (VNII TRANSMASH)**

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Participants of the exhibition «Space science – Past and Future»:

1. Space Research Institute, Russian Academy of Sciences (IKI RAS)
2. Apply Math Institute (AMI RAS)
3. Kotelnikov Institute of Radio-engineering and Electronics (IRE RAS)
4. Astro-Space Center, Lebedev Institute of Physics (ASC RAS)
5. Institute of Astronomy (INASAN)
6. Institute of Applied Astronomy RAS
7. PUSHKOV Institute of Terrestrial Magnetism, Ionosphere and Radiowave Propagation (IZMIRAN)
8. Vernadsky Institute of Geochemistry and Analytical Chemistry (GEOHI)
9. Institute for Biomedical Problems (IMBP RAS)
10. Skobeltsyn Nuclear Research Institute, Moscow State University

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Participants of the exhibition «Space science – Past and Future» (continuation):

1. Soil-Biology Faculty, Moscow State University
2. Moscow Engineering Physics Institute, Institute (MEPhI)
3. Moscow Aviation Institute, Aerospace Faculty
4. Lavochkin Science and Production Association
5. S.P.Korolev Rocket and Space Corporation Energia
6. Science and Production Enterprise: Iosifian Science and Research Institute of Electromechanics
7. «Fakel» - State Science and Research Institute of Apply Mechanics and Electrodynamics,
8. Keldysh Center - Keldysh Research Center
9. Sternberg Astronomical Institute Moscow State University
10. Russian Science and Research Institute for Space Instrumentations
11. Russian Science and Research Institute for Transport Mashinobuilding

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Ceremonial meeting dedicated to the 50th anniversary of the First artificial satellite launch (October, 4 2007)

Greetings of the heads of the Russian Federation, the Russian Academy of Sciences, the Moscow Government and foreign guests:

- Mironov S.M. – Chairman of the Council of Federation of the Federal Assembly of the Russian Federation
- Nekipelov A.D. –Acting the President of the Russian Academy of Sciences
- Panteleev E.A. – Minister of Moscow Government
- Perminov A.N. – Director of the Federal Space Agency
- Michael Griffin - NASA Administrator
- Jean-Jacques Dordain –ESA Director General
- N. Sabotinov–academician, Vice-President of the Bulgarian Academy of Sciences

RAS / ROSCOSMOS

Acting the President academician Alexander Nekipelov handed over Honourable awards of the Russian Academy of Sciences, adjudged for outstanding researches in the field of space-rocket engineering:

- **To Academician B. Chertok – S.P. Korolev Gold Medal**
- **To Professors N. Ivanov and E. Akim – K.E. Tsiolkovsky Premium**
- **To Professors E. Mikrin, B. Pavlov and V. Kulbe – B.N. Petrov Premium**

The Director of the Federal Space Agency Anatoli Perminov handed over Departmental Awards, adjudged for the large contribution in the field of Space Researches and International Cooperation:

- **"K.E. Tsiolkovsky Medal" to 32 scientists of institutes of the Russian Academy of Sciences and**
- **"Certificates of Honour of the Federal Space Agency" to 47 scientists of institutes of the Russian Academy of Sciences**

RAS / ROSCOSMOS

Survey papers on current problems of space science and technology (October 5, 2007):

Profesor M.I. Panasyk «Cosmic rays – trevellers of the Universe»
Professor A. Nishida «From SPUTNIK to international programs. Solar-terrestial physics»
Academician R.A. Sunyaev «X-ray astronomy – progress and horizons»
Academician A.I. Grigoriev «Achivments and perspectives in space biology and medicine»
Professor T. Owen «Origin of life. Search for life traces in the Solar system»
Professor J. Blamont «Investigations of Venus and other planetary atmospheres. Role of international cooperation»
Professor G.M. Polischuk «Perspective programms of Russian planetary exploration»
Professor J. Head «Comparative planetology»
Professor M. Zuber «Space investigation of internal planetary structure.»

THANK YOU FOR ATTENTION!