

**Bauman Moscow State Technical
University**



Special Machinery Department

Youth Space Center

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*Bauman Moscow State Technical
University*



*Space Development: Theory and Practice
Annual International Space Workshop*

*Under the aegis
of the Federal Space Agency*



Russia

Korolev, Moscow region

*June 30 - July 10
2007*

SDTP-2007 program

- Day 1** **June 30, Saturday**
Arrival to Moscow (Participants are met by YSC representatives at "Sheremetyevo-2" airport)
- Day 2** **July 1, Sunday**
9:00 *Breakfast*
11:00 *Cultural program in Moscow: Red Square, Kremlin, Alexander's Garden, All-Russian Exhibition Centre*
18:30 *Diner at IPK*
19:30 *Introductory Session*
- Day 3** **July 2, Monday**
8:15 *Breakfast*
10:30 *Opening ceremony in Federal Space Agency*
13:00 *Lunch*
15:00 *Visit to Bauman University museum*
18:30 *Dinner in IPK*
19:30 *Introduction to team project*
- Day 4** **July 3, Tuesday**
8:15 *Breakfast*
10:00 *Visit to RSC "Energia"*
13:00 *Lunch at IPK*
15:00 *Visit to Mission Control Center (Korolev)*
18:30 *Dinner*
19:30 *Team project*
21:00 *Disco (optional)*
- Day 5** **July 4, Wednesday**
8:15 *Breakfast*
10:00 *Visit to Gagarin cosmonaut training center in Star City*
13:00 *Lunch at Star City*
14:30 *Scientific conference. Participants Scientific Activity reports*
18:30 *Dinner*
19:30 *Team project*
21:00 *Disco (optional)*
- Day 6** **July 5, Thursday**
8:15 *Breakfast*
10:00 *Visit to Khrunichev Space Center*
14:00 *Lunch at Khrunichev Space Center*
15:30 *Sightseeing in Moscow downtown (free time)*
19:00 *Cultural program: Theater*

SDTP-2007 program

- Day 7** **July 6, Friday**
8:15 *Breakfast*
10:00 *Visit to Lavochkin Scientific and Industrial Association*
13:00 *Lunch at IPK*
14:30 *Visit to NPO "Energomasch"*
18:30 *Dinner*
19:30 *Meeting with Russian cosmonauts and International astronauts. Discussions*
- Day 8** **July 7, Saturday**
8:15 *Breakfast*
10:30 *Visit to BMSTU Research and Educational facility in Orevo, Moscow region*
13:00 *Lunch at Orevo*
15:00 *Visit to the Laura of the Holy Trinity and St. Sergius*
18:30 *Dinner*
19:30 *Team project*
21:00 *Disco (optional)*
- Day 9** **July 8, Sunday**
8:15 *Breakfast*
10:00 *Cultural program: Tretyakov gallery, the Arbat street, the Pushkin museum of Fine Arts*
17:00 *Boat trip down the Moscow river.*
- Day 10** **July 9, Monday**
8:15 *Breakfast*
10:00 *Visit to Production Association "Zvezda"*
13:00 *Lunch at IPK*
14:30 *Visit to Monino Air Force museum*
18:30 *Dinner*
21:30 *UKSEDS group departure to St. Petersburg*
- Day 11** **July 10, Tuesday**
Departure

SDTP-2007 excursion sites

Bauman Moscow State Technical University



Founded in 1830 as an Emperor's Vocational School and located almost in the heart of Russia's capital, Moscow State Technical University named after N.E. Bauman (MSTU) was always known as an Engineering University of educational excellence, having a potential for real greatness.

A long-term history of University provides many examples of creating a number of the world-known scientific schools which contributed to developing of different fields such as space engineering, heating engineering, biophysics, aerodynamics, radio physics, radio electronics, optics, laser technology, dynamics and strength of materials.

The University has an outstanding faculty of 3500 men and women, many of whom are recognized for their scholarship. It numbers 350 Doctors of Science and 1800 Ph.D.s. Presently there are approximately 18000 students, concentrating their studies in science and engineering, and 1000 post graduates, working on their Ph.D. theses at BMSTU.

SDTP-2007 excursion sites

Bauman Moscow State Technical University



The most-stated reason for them to enter here was the University's academic reputation.

The University provides close co-operation activities with Russian Academy of Sciences and Industry.

Opportunities offered by MSTU attracted more than 300 international students from 20 countries all over the world.

According to MSTU curriculum, its academic offerings are: bachelor's degree programs, master's programs, Ph.D. programs, pre-University programs, and internship. All training programs meet state educational standards and carry national accreditation.

SDTP-2007 excursion sites

Home base for SDTP-2007



The home base for SDTP-2007 is the Staff's Training Institute of Machine and Instrument Building (IPK) located in Korolev, Moscow Region. IPK is ideally suited to support our SDTP-2007 workshop with a hotel, cafeteria, and full conference facilities located under one roof. IPK also has a small bar/cafe which is open most of the time. Transportation for SDTP-2007 will be provided in a coach.

SDTP-2007 excursion sites

Khrunichev Space center



Formally established in 1993, the company originates from Khrunichev production plant founded in 1916 and Salyut design office established in 1951. Currently Khrunichev is one of the world's leaders in launch vehicle and spacecraft development. Principal directions of company's activities include manned spacecraft (Salyut, Almaz, Mir, Zarya), launch vehicles (Proton, Rokot), ground launch support infrastructure, spacecraft and rockets manufacturing and ground testing, space communications, remote sensing and launch services.

SDTP-2007 excursion sites

Rocket and Space Corporation "Energia"



This is Russia's leading company that designs, manufactures, tests, launches and operates manned spacecrafts. Energia products include Vostok, Voskhod, Souyz and Progress transport vehicles, R-7, N-1 and Energia launch vehicles, Salut, Mir space stations. RSC Energia is the Russian primary contractor on ISS, Sea Launch and other international projects. There is an authentic space hardware in the display hall including Vostok capsules flown by Yu. Gagarin, V. Tereshkova, Voskhod capsule flown by A. Leonov and P. Beliaev, the first artificial satellites and Salut space station.

SDTP-2007 excursion sites

Mission Control Center



Mission Control Center is known all over the world. The first international flight Soyuz-Apollo was controlled from the MCC. Built in 1973, MCC has practically controlled missions of Mir and Salyut orbital stations, Soyuz TM manned spacecrafts, Progress space transport vehicles, space scientific modules for orbital complexes, reusable space shuttle Buran and unmanned interplanetary space probes Venus, Mars, Zond, Vega and Phobus. MCC does its own scientific research and solves specific space flight control tasks.

SDTP-2007 excursion sites

Scientific and Production Association "Zvezda"



Scientific and Production Association "Zvezda" researches, designs and produces life-support systems for aviation and space applications. It has been developing ejection seats for fighter aircraft since 1952. The products of the enterprise today cover the entire spectrum of aviation-related requirements for life support, from clothing (flying suits, anti-gravity suits, space suits, helmets) to ejection systems, oxygen systems, and survival kits. "Zvezda" is the sole developer of aviation/space-related life-support systems in the former Soviet Union.

SDTP-2007 excursion sites

Orevo Facility of Bauman Moscow State Technical University



The Orevo Facility of Bauman MSTU is located in Dmitrov which is about 80 km north of Moscow and is an active training facility for the university's engineering students. Included in this visit is a R-7 booster, Molniya booster acceleration block, planetary probes, early Soyuz spacecraft sections, and one of the few surviving LK manned lunar spacecraft. Participants are invited to carefully inspect all space hardware on display.

SDTP-2007 excursion sites

Monino Air Force Museum



The Monino Air Force Museum exists since 1958 and now is the biggest aviation museum on the territory of the former USSR. The museum presents the origin and development of aviation in Russia, formation of domestic aviation science and

industry between the World War I and the World war 2, the Air Force contribution to the rout of Nazis, the advent after the war of novel jet aviation and evolution of the latter up to the present day. Museum's collection numbers more than 160 aircraft, 120 engines, a lot of model aircraft, air guns, missiles and rockets, bombs, fuses and ammunition, navigation instruments, pieces of radio and communication equipment, rescue equipment, flight insignia, uniform, combat banners and flags, documents, letters, personal things of pilots, as well as many art exhibits.

SDTP-2007 excursion sites

Gagarin Cosmonaut Training Center in Star City



The Yuriy Gagarin Cosmonaut Training Center at Star City (Zvezdny Gorodok) is the community where cosmonauts live with their families and train for upcoming space missions. Center activities include cosmonauts training in fields as follows: space vehicle control operations, space vehicle systems operation, conducting scientific experiments in space, training for life in space. The SDTP-2007 tour will include visits to the Soyuz spacecraft training area, the Mir space station training area, the hydrolaboratory neutral buoyancy facility and the center grounds.

SDTP-2007 excursion sites

Lavochkin Industrial and Scientific Association



This company is Russia's leader in development and production of space probes and rovers. Principal directions of activity of Lavochkin include: design and manufacturing of automated spacecraft; analysis of spacecraft trajectories; testing of equipment at levels of system; subsystem and unit preparation of spacecraft for a mission, including pre-launch checkout and testing at the launch site, control of spacecraft from the Center for Deep Space Communications (Yevpatoria) and from the Mission Control Center (Moscow region). Lavochkin possesses a number of testing facilities: centrifuge for stress and functional testing of assemblies under linear accelerations; vibration tables; chambers for testing systems against hot and cold temperatures. Lavochkin products include Luna-15, 16, 17, Venera-13,14,15,16, Mars, Vega, Phobos, Granat, etc

SDTP-2007 excursion sites

Energomash Scientific and Industrial Association (optional)



Energomash Scientific and Industrial Association is the leading Russian enterprise in development of powerful liquid-fuelled rocket engines (LREs). Principal directions of its activity include: theoretical research in the field of liquid-fuelled rocket engines; development of liquid-fuelled rocket engines for first and second stages of launch vehicles using both hyperbolic and cryogenic propellant components; development of three-component liquid-fuelled rocket engines; experimental work on liquid rocket engine designs, their components and subassemblies; expert evaluation of results from testing of units and subassemblies of LREs. Energomash has designed and manufactured liquid propellant rocket engines for launch vehicles such as Vostok, Voskhod, Souyz

SDTP-2007

Team project and Scientific conference

In the framework of the Workshop it is planned to develop a Team project, which includes a concept design of Mars exploration mission.

During a team project all participants will split into several groups to develop a separate part of the mission. Each team has to design and build a mockup of their space system. Each team will then defend their project during the Scientific conference. Participants are also welcome to make presentations about their scientific activities during the conference.



SDTP-2007

Discussions with cosmonauts and astronauts



With Russian cosmonaut
Sergey Krikalev, SDTP2003



With Russian cosmonauts
A. Serebrov and G. Strelakov, 2002



With Russian cosmonauts S.
Krikalev, A. Lazutkin and American
astronauts J. Phillips, E. Lu, 2002



With Russian cosmonaut A.
Lazutkin and American astronauts
D. Tany and C. Hadfield, 2002



With Russian cosmonaut
Alexei Leonov, 2000



With Russian cosmonauts V.
Kubasov and A. Serebrov, 2002

SDTP-2007

Cultural program



Red Square, Saint Basils Cathedral



Gorky park



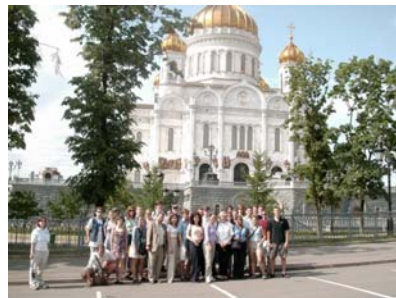
Kremlin Cathedrals



Pushkin fine arts museum



Izmailovo souvenir street market



Christ The Saver Cathedral

SDTP-2007

Boat trip and barbecue

