

# **ПЯТНАДЦАТЫЙ МОСКОВСКИЙ СИМПОЗИУМ ПО ИССЛЕДОВАНИЯМ СОЛНЕЧНОЙ СИСТЕМЫ 15M-S<sup>3</sup>**

**октябрь 21-25, 2024  
ИНСТИТУТ КОСМИЧЕСКИХ ИССЛЕДОВАНИЙ  
РОССИЙСКОЙ АКАДЕМИИ НАУК  
МОСКВА, РОССИЯ**

# **THE FIFTEENTH MOSCOW SOLAR SYSTEM SYMPOSIUM 15M-S<sup>3</sup>**

**october 21-25, 2024  
SPACE RESEARCH INSTITUTE  
OF RUSSIAN ACADEMY OF SCIENCES  
MOSCOW, RUSSIA**

спонсоры:

- Институт космических исследований РАН
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ИНСТИТУТ КОСМИЧЕСКИХ ИССЛЕДОВАНИЙ РОССИЙСКОЙ АКАДЕМИИ НАУК (ИКИ РАН)  
2024

# TABLE OF CONTENT

## INTRODUCTION

## PROGRAM COMMITTEE

## PROGRAM

overview PROGRAM

scientific PROGRAM

## ABSTRACTS

## INFORMATION

ADDRESS

METRO MAP

REGISTRATION AND INFORMATION DESK

ORAL SESSIONS, location

POSTER SESSIONS, location

INTERNET ACCESS AND WiFi

SOCIAL PROGRAM

LUNCH POINTS

# THE FIFTEENTH MOSCOW SOLAR SYSTEM SYMPOSIUM 15M-S<sup>3</sup>

**SPACE RESEARCH INSTITUTE  
MOSCOW, RUSSIA  
october 21–25, 2024**

Starting from 2010, the Space Research Institute holds annual international symposia on Solar system exploration. Main topics of these symposia include wide range of problems related to formation and evolution of Solar system, planetary systems of other stars; exploration of Solar system planets, their moons, small bodies; interplanetary environment, astrobiology problems. Experimental planetary studies, science instruments and preparation for space missions are also considered at these symposia.

The Fifteenth Moscow international Solar System Symposium (15M-S3) will be held from October 21 till 25, 2024

## **THE FOLLOWING SESSIONS WILL BE HELD DURING THE SYMPOSIUM:**

### OPENING SESSION

- Session. MARS
- Session. VENUS
- Session. GIANT PLANETS
- Session. MOON AND MERCURY
- Session. SMALL BODIES (INCLUDING COSMIC DUST)
- Session. EXTRASOLAR PLANETS
- Session. ASTROBIOLOGY

Space Research Institute holds this symposium with participation of the following organizations:

- Vernadsky Institute of Geochemistry and Analytical Chemistry RAS, Russia
- Brown University, USA
- Schmidt Institute of Physics of the Earth RAS, Russia
- Keldysh Institute of Applied Mathematics RAS, Russia
- Kotelnikov Institute of Radio-engineering and Electronics RAS, Russia
- Sternberg Astronomical institute, Moscow State University, Russia

Symposium website: <https://ms2024.cosmos.ru>

Contact email address: [ms2024@cosmos.ru](mailto:ms2024@cosmos.ru)

# PROGRAM COMMITTEE

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**members:**

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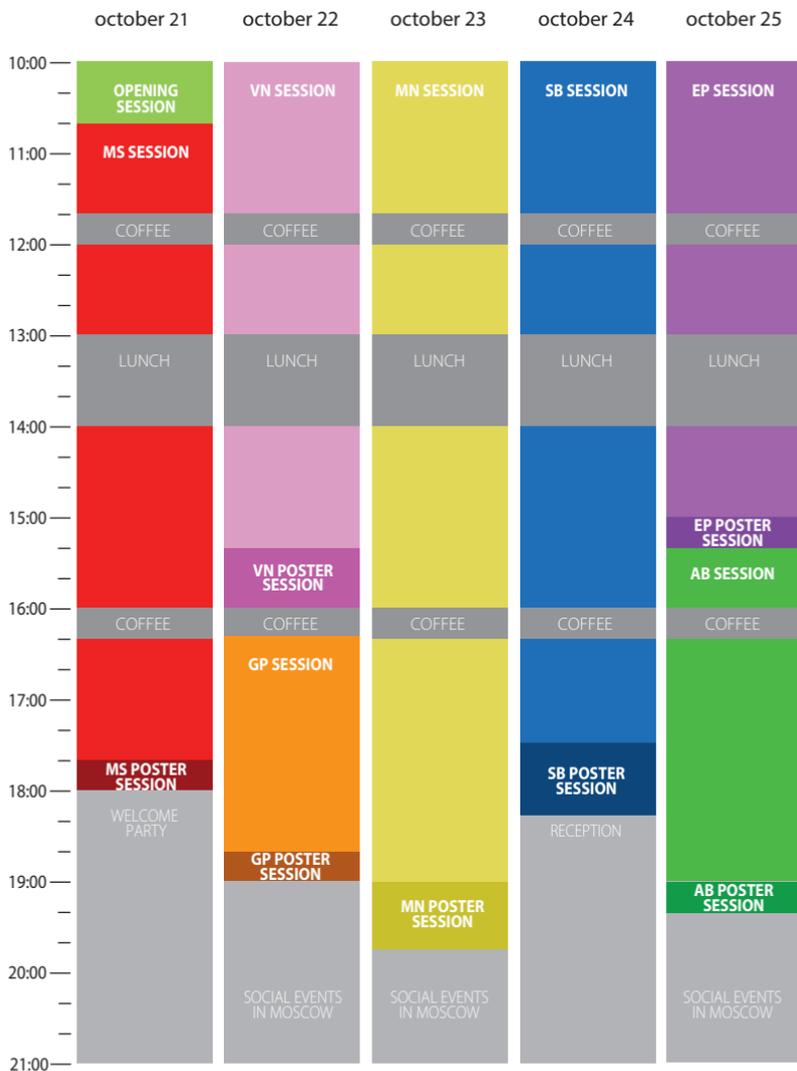
**ROSTE O.Z.** IKI RAS

# PROGRAM

# overview 15M-S<sup>3</sup> program

## THE FIFTEENTH MOSCOW SOLAR SYSTEM SYMPOSIUM

Space Research Institute, 21–25 October 2024



- **MS SESSION:** MARS SESSION
- **VN SESSION:** VENUS SESSION
- **GP SESSION:** GIANT PLANETS SESSION
- **MN SESSION:** MOON AND MERCURY SESSION
- **SB SESSION:** SMALL BODIES (INCLUDING COSMIC DUST) SESSION
- **EP SESSION:** EXTRASOLAR PLANETS SESSION
- **AB SESSION:** ASTROBIOLOGY SESSION

# 15M-S<sup>3</sup> SCIENTIFIC PROGRAM

MONDAY, 21 OCTOBER 2024

10.00–10.40

## OPENING SESSION

Convener: **Lev ZELENYI**  
conference hall, second floor

10.40–18.05



## MARS SESSION

Convener: **Oleg KORABLEV**  
conference hall, second floor

10.40–11.00	<b>Anna FEDOROVA et al</b>	Mars-Express: 20 years of atmospheric and surface measurements in Mars orbit	15MS3-MS-01
11.00–11.15	<b>Alexander LOMAKIN et al</b>	Aerosol scattering correction of SPICAM-IR surface spectra	15MS3-MS-02
11.15–11.30	<b>Mikhail LUGININ et al</b>	HCl uptake on water ice aerosols in the atmosphere of Mars from the ACS MIR data	15MS3-MS-03
11.30–11.50	<b>Alexander TROKHIMOVSKIY et al</b>	Measurements of hydrogen chloride in Martian atmosphere during the aphelion season	15MS3-MS-04
11.50–12.10	COFFEE-BREAK		
12.10–12.30	<b>Denis BELYAEV et al</b>	Seasonal water vapor abundance and saturation in the Martian mesosphere and thermosphere	15MS3-MS-05
12.30–12.45	<b>Dariia KOSSOVA et al</b>	Study of diffusion regimes in the vertical structure of Martian atmosphere	15MS3-MS-06
12.45–13.00	<b>Ekaterina STARICHENKO et al</b>	2.5 years of observation of gravity wave activity in the Martian atmosphere from the ACS/TGO experiment	15MS3-MS-07
13.00–14.00	LUNCH		
14.00–14.20	<b>Ekaterina CHOLOVSKAIA and Mikhail IVANOV</b>	Clay minerals in the upper part of Nirgal Vallis, Mars	15MS3-MS-08
14.20–14.40	<b>Mikhail IVANOV and James HEAD</b>	Time constraints on the formation of valley networks on Alba Patera, Mars (preliminary results)	15MS3-MS-09
14.40–15.00	<b>Jun CHU et al</b>	Morphological features along the fixed contour lines indicating water level changes in the Holden crater on Mars	15MS3-MS-10
15.00–15.20	<b>Egor KULIK and Tamara GUDKOVA</b>	Constraints on the viscoelastic properties of the Martian mantle by the Chandler wobble period	15MS3-MS-11
15.20–15.40	<b>Anton SALNIKOV et al</b>	Challenges and Approaches in Constructing Mars' Magnetic Field Models from Satellite Data	15MS3-MS-12

15.40–16.00	<b>Hui LI et al</b>	Statistical Properties of Plateau-like Turbulence Spectra in the Martian Magnetosheath: Maven Observation	15MS3-MS-13
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16.00–16.20		COFFEE-BREAK	
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16.20–16.40	<b>Jordanka SEMKOVA et al</b>	Radiation environment on TGO Mars orbit during solar particle events in 2024	15MS3-MS-14
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16.40–17.00	<b>Boris IVANOV</b>	New craters on Mars – expanding catalog in 2023-2024	15MS3-MS-15
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17.00–17.20	<b>Elena PODOBNAYA et al</b>	An expanded catalog of recent meteoroid impact sites on Mars	15MS3-MS-16
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17.20–17.40	<b>Elena KARPOVICH et al</b>	Unmanned aircraft for Mars exploration: preparing a scale model for flight tests	15MS3-MS-17
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17.40–18.05		<b>POSTER SESSION, SESSION MARS</b>	
5 posters * 5 min			

<b>Nadezhda CHUJKOVA et al</b>	The evolution of Mars and the possible dynamics of its interior	15MS3-MS-PS-01
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<b>Ekaterina CHOLOVSKAIA and Mikhail IVANOV</b>	Geological structure of the upper part of Nirgal Vallis, Mars	15MS3-MS-PS-02
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<b>Tatiana MOROZOVA and Sergey POPEL</b>	Instabilities in dusty plasma in the atmosphere of Mars associated with the passage of meteoroids	15MS3-MS-PS-03
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<b>Daria MOROZOVA and Oleg VAISBERG</b>	Variation in Plasma Composition During the Rotation of Mars' Magnetopause	15MS3-MS-PS-04
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<b>Sergei KULIKOV and Alexander SKALSKY</b>	Proxies to interplanetary conditions at Mars by an artificial neural network	15MS3-MS-PS-05
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18.05–19.30		WELCOME PARTY	
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10.00–16.00

# 2 VENUS SESSION

Convener: **Ludmila ZASOVA**  
conference hall, second floor

10.00–10.20	<b>Masahiro TAKAGI</b> et al	Planetary-scale waves and quasi-periodic variation of the equatorial jet in the Venus atmosphere	15MS3-VN-01
10.20–10.40	<b>Jose SILVA</b> et al	Stationary mesoscale features on Venus' dayside clouds	15MS3-VN-02
10.40–11.00	<b>Liudmila ZASOVA</b> et al	Peculiarities of the Venus Upper Cloud Layer Circulation During the 24 <sup>th</sup> Solar Activity Cycle	15MS3-VN-03
11.00–11.20	<b>Dmitrij TITOV</b>	Venus atmospheric dynamics: digging into the Venus Express observations	15MS3-VN-04
11.20–11.40	<b>Yutian CAO</b> et al	Modeling studies of Venusian ionosphere and upper atmosphere	15MS3-VN-05
11.40–12.00	COFFEE-BREAK		
12.00–12.15	<b>Elizaveta FEDOROVA</b> et al	Distributions of CO <sub>2</sub> , HDO and H <sub>2</sub> O concentration and temperature in the mesosphere of Venus based on SOIR/VEx observations for 2006–2014	15MS3-VN-06
12.15–12.30	<b>Daria EVDOKIMOVA</b> et al	Venus lower atmosphere properties from SPICAV-IR/VEX measurements in NIR transparency windows	15MS3-VN-07
12.30–12.45	<b>Arina SHIMOLINA</b> et al	Geological history of Theia Mons and graben system (mostly dyke swarm) mapping in the northern area of Beta Regio	15MS3-VN-08
12.45–13.00	<b>Dmitry DOBRITSA</b> et al	Meteoroid impacts analysis for a spacecraft en route to Venus	15MS3-VN-09
13.00–14.00	LUNCH		
14.00–14.20	<b>Lev ZELENYI</b> et al	Venera-D mission for comprehensive study of Venus	15MS3-VN-10
14.20–14.40	<b>Vladislav ZUBKO</b> et al	Analysis of the prospective mission scenario with determination of attainable landing sites on Venus under technical restrictions to lander-orbiter functioning	15MS3-VN-11
14.40–15.00	<b>Piero D'INCECCO</b> et al	The active volcanoes of Kamchatka as suitable terrestrial analogs within the AVENGERS initiative: an opportunity for in-situ operational tests for future landing Venus missions.	15MS3-VN-12
15.00–15.20	<b>Joshita SHARMA</b>	Payload Module for Long Duration Venus Exploration	15MS3-VN-13

15.20–16.00

## POSTER SESSION, SESSION VENUS

10 posters \* 4 min

<b>Marina PATSAEVA et al</b>	Wind speed variations at the Venus cloud top level from UVI/Akatsuki images (283 and 365 nm)	15MS3-VN-PS-01
<b>Dmitry GORINOV et al</b>	Horizontal winds in the lower clouds of Venus from VIRTIS/VEx and IR2/Akatsuki 1.74 $\mu\text{m}$ observations	15MS3-VN-PS-02
<b>Vladimir OGIBALOV et al</b>	Emissions in the 4.3–1.05 $\mu\text{m}$ bands of carbon dioxide molecules, outgoing from a planetary atmosphere on existence of a layer with wind velocity gradient	15MS3-VN-PS-03
<b>Evgeniya GUSEVA and Mikhail IVANOV</b>	The spatial-genetic relationship of the coronae sourcing lava flows and large volcanoes of Venus	15MS3-VN-PS-04
<b>Danil MALYSHEV and Mikhail IVANOV</b>	Preliminary insights into the evolution of central type volcanism on Venus	15MS3-VN-PS-05
<b>Vladislav ZUBKO and A.A. BELYAEV</b>	A simple geometrical approach for solving the eclipse problem	15MS3-VN-PS-06
<b>Tamara GUDKOVA and Alexey BATOV</b>	On load numbers for Venus	15MS3-VN-PS-07
<b>Oliveira AMORIM and Tamara GUDKOVA</b>	The effect of the dense atmosphere of Venus on the Love numbers	15MS3-VN-PS-08
<b>Oliveira AMORIM and Tamara GUDKOVA</b>	On the Chandler Wobble of Venus	15MS3-VN-PS-09
<b>Oliveira AMORIM and Tamara GUDKOVA</b>	The validation of the method for calculating the Chandler Wobble of Venus	15MS3-VN-PS-10

16.00–16.20

COFFEE-BREAK

16.20–19.00

3

## GIANT PLANETS SESSION

Convener: Valery SHEMATOVICH  
conference hall, second floor

16.20–16.40	<b>Igor ALEXEEV et al</b>	Alfven wings in the sub-Alfvenic flow of magnetized plasma formed outside the magnetosphere of a celestial body, and the possible generation of auroras in the atmosphere of the central body and in the atmosphere of the satellite	15MS3-GP-01
16.40–17.00	<b>Andrey KIRILLOV</b>	The study of the role of metastable nitrogen in collisional molecular processes of the upper and middle atmosphere of Titan	15MS3-GP-02

17.00–17.20	<b>Nikolai KISELEV et al</b>	Changes in the longitude polarization dependence of Jupiter's moon Io as evidence of the long-term variability of its volcanic activity	15MS3-GP-03
17.20–17.40	<b>Nikita SIMBIREV et al</b>	The flight to Neptune and its moons Triton and Nereid as a demonstration of the possibility of using low-thrust engines in missions to giant planets	15MS3-GP-04
17.40–18.00	<b>Anatoly GOLOVKOV and I.Yu. ILYINA</b>	Calculation of the position of the beginning point of the galactic year in the orbit of the Solar system in the Galaxy	15MS3-GP-05
18.00–18.20	<b>Philipp VYSIKAYLO</b>	Non-stationary 3D perturbation theory for describing nonlinear interaction of electric field with matter in plasma with current. Vysikaylo's electric field shock waves and plasma nozzles	15MS3-GP-06
18.20–18.40	<b>Zhonghua YAO</b>	The Frontiers of Jovian Sciences and Perspective	15MS3-GP-07

18.40–19.00

**POSTER SESSION, SESSION GIANT PLANETS**

3 posters \* 6 min

<b>Vladimir VDOVICHENKO et al</b>	Absorption variations in the ammonia bands of 645 and 790 nm along the central meridian of Jupiter in 2023	15MS3-GP-PS-01
<b>Vladimir VDOVICHENKO et al</b>	Investigation of variations in methane absorption bands along the central meridian of Jupiter in 2023	15MS3-GP-PS-02
<b>Vladimir VDOVICHENKO</b>	Methodological aspects of the study of ammonia-methane absorption variations in the atmosphere of Jupiter	15MS3-GP-PS-03

10.00–19.45

# 4 MOON AND MERCURY SESSION

Conveners: **Igor MITROFANOV, Maxim LITVAK**  
conference hall, second floor

10.00–10.20	<b>Alexander KOZYREV et al</b>	MGNS experiment science investigation during cruise to Mercury onboard ESA MPO/BepiColombo mission	15MS3-MN-01
10.20–10.40	<b>Zhiyong XIAO et al</b>	Recent geological activity on Mercury	15MS3-MN-02
10.40–11.00	<b>Olga CHERNENKO</b>	Design and optimizing an interplanetary trajectory of a spacecraft to Mercury	15MS3-MN-03
11.00–11.20	<b>Anton SANIN</b>	Mapping of polar lunar water	15MS3-MN-04
11.20–11.40	<b>Alexander BASILEVSKY et al</b>	Lobate rimmed craters in PSR parts of the lunar south-polar craters Faustini and Shoemaker	15MS3-MN-05

11.40–12.00

COFFEE-BREAK

12.00–12.20	<b>Ilia KUZNETSOV et al</b>	Lunar dusty plasma and its investigation proposal	15MS3-MN-06
12.20–12.40	<b>Michael SHPEKIN and R. T. FERREYRA</b>	Lunar craters without signs of the matter melting and the matter emissions	15MS3-MN-07
12.40–13.00	<b>Lianghai XIE and Lei LI</b>	Global Hall MHD Simulations of the Solar Wind Implantation Flux on the Lunar Surface	15MS3-MN-08

13.00–14.00

LUNCH

14.00–14.20	<b>Lev ZELENYI and Igor MITROFANOV</b>	Lunar mission on the Northern and Southern Poles with two identical landers: goals and objectives	15MS3-MN-09
14.20–14.40	<b>Mikhail MALENKOV et al</b>	Development of a project of key objects of mobile robotics for the lunar station	15MS3-MN-10
14.40–15.00	<b>Ivan AGAPKIN and Egor SOROKIN</b>	Application of Selective Laser Melting for lunar soil analogue	15MS3-MN-11
15.00–15.20	<b>Artem LYSENKO</b>	3D printing of lunar regolith: testing physical conditions for implementation of SLM technology	15MS3-MN-12
15.20–15.40	<b>Andrey SHUGAROV et al</b>	A concept of a simple small-sized (5-10 kg) lunar astronomical UV telescope using high TRL components	15MS3-MN-13
15.40–16.00	<b>Habibullo ABDUSSAMATOV</b>	Moon-based continuous coordinate- photometric monitoring of the asteroid-comet hazard throughout the celestial sphere	15MS3-MN-14

16.00–16.20 COFFEE-BREAK

16.20–16.40	<b>Huijuan WANG et al</b>	Recent progress on the lunar-based UV-Optical-IR telescope for ILRS	15MS3-MN-15
16.40–17.00	<b>Maya DJACHKOVA et al</b>	Optical imaging of the Moon landing site, as the data for hazard avoidance	15MS3-MN-16

17.00–19.00 **LUNAR REGOLITH**  
 Convener: Mikhail GERASIMOV  
 conference hall, second floor

17.00–17.20	<b>Svetlana DEMIDOVA et al</b>	Unexpected components in Chang'E-5 soil sample	15MS3-MN-17
17.20–17.40	<b>Egor SOROKIN et al</b>	Experimental data on the occurrence and chemical composition of metallic iron nanospherules and comparison with data from the Chang'E-5 lunar soil	15MS3-MN-18
17.20–18.00	<b>Mikhail GERASIMOV et al</b>	Morphology of impact induced condensates: lunar findings and experiment	15MS3-MN-19
18.00–18.20	<b>Maxim ZAITSEV et al</b>	Volatiles in the lunar regolith delivered by Chang'E-5 mission: preliminary results	15MS3-MN-20
18.20–18.40	<b>Sergei VOROPAEV et al</b>	Olivine studies under lunar surface conditions	15MS3-MN-21
18.40–19.00	<b>Lidiia LAKHMANOVA and Svetlana DEMIDOVA</b>	Spinel-bearing lithologies in the lunar highland meteorites	15MS3-MN-22

19.00–19.45 **POSTER SESSION, SESSION MOON AND MERCURY**  
 15 posters \* 3 min

<b>Jinsong PING et al</b>	Preliminary ground optical polarization observation of the Moon	15MS3-MN-PS-01
<b>Alexander BASILEVSKY et al</b>	Photogeological analysis of ShadowCam images on the permanently shadowed floor of lunar crater Shoemaker	15MS3-MN-PS-02
<b>Ekaterina FEOKTISTOVA and Zhanna RODIONOVA</b>	Analysis of the crater depths in the polar regions of the Moon and Mercury	15MS3-MN-PS-03
<b>Yury NEFEDYEV et al</b>	Creation of a comprehensive fundamental selenographic catalog of impact craters based on data from modern lunar missions and satellite remote monitoring	15MS3-MN-PS-04
<b>Yuri BONDARENKO et al</b>	Radar mapping of the South Polar region of the Moon at 4.2 cm wavelength	15MS3-MN-PS-05

<b>Alexander KOSOV et al</b>	Moon's gravity field investigation by PKD instrument deployed on Luna-26 Orbiter	15MS3-MN-PS-06
<b>Polina SAVVATIMOVA et al</b>	Application of cryocooling systems for the mission of Lunar polar sample return	15MS3-MN-PS-07
<b>Alexandra UVAROVA and M.Yu. MAKOVCHUK</b>	Creation of soils-analogues for scientific equipment testing	15MS3-MN-PS-08
<b>Alexander GUSEV et al</b>	Infrastructure development of the Moon IX: 3D printing on lunar regolith	15MS3-MN-PS-09
<b>Ekaterina FABER and R. R. KASPRANSKY</b>	Challenges and innovations in lunar environment simulation for analog missions	15MS3-MN-PS-10
<b>Olga TURCHINSKAYA and Evgeny SLYUTA</b>	Landing site choice for Luna-27 mission in the Moon South Polar Region	15MS3-MN-PS-11
<b>Alexander KRASILNIKOV et al</b>	The three-dimensional geological model of the VIPER mission landing area	15MS3-MN-PS-12
<b>Alexander SAFRONOV</b>	Theory of the origin of terrestrial and lunar ores	15MS3-MN-PS-13
<b>Vladimir NAZAROV et al</b>	Joint Luna Data Center (JLDC) Project	15MS3-MN-PS-14
<b>Azariy BARENBAUM</b>	Influence of Sun, Moon and planets on Earth's gravitational field:discovery of gravitons and estimation their energy	15MS3-MN-PS-15

10.00–18.15

# 5 SMALL BODIES SESSION

## including cosmic dust

Conveners: **Alexander BASILEVSKY**, **Alexander ZAKHAROV**  
conference hall, second floor

10.00–10.20	<b>Sergey POPEL et al</b>	Dusty plasma processes in the vicinity of comets	15MS3-SB-01
10.20–10.40	<b>Nikolay BORISOV</b>	Influence of the dielectric permittivity of the surface layer on charging of dust grains on airless cosmic bodies	15MS3-SB-02
10.40–11.00	<b>Alexander KROT and Irina SAVINYKH</b>	Development of radiotomography algorithms for the study of electron clouds in the ionosphere and structures in the dusty plasma using low-orbital satellite systems	15MS3-SB-03
11.00–11.20	<b>Vladimir BUSAREV et al</b>	Sublimation-driven dust activity of primitive asteroids suggests that they contain water ice	15MS3-SB-04
11.20–11.40	<b>Jian-Yang LI and DART Investigation Team</b>	Long-Term Evolution of the Dimorphos Tail	15MS3-SB-05
11.40–12.00	COFFEE-BREAK		
12.00–12.10	<b>Sergei IPATOV</b>	Migration of bodies ejected from Mars	15MS3-SB-06
12.10–12.20	<b>Evgeniya PETROVA and V. I. GROKHOVSKY</b>	Experimental transformation of the Chelyabinsk LL5 meteorite matter of light-colored lithology into dark-colored lithology	15MS3-SB-07
12.20–12.30	<b>Anna KARTASHOVA et al</b>	Analysis of the meteor showers characteristics	15MS3-SB-08
12.30–12.40	<b>Sergey PAVLOV et al</b>	Association of sporadic meteors with NEAs of the rubble pile type	15MS3-SB-09
12.40–12.50	<b>Akos KERESZTURI et al</b>	Mineral changes by laboratory based proton irradiation on meteorites to understand space weathering and asteroid properties	15MS3-SB-10
12.50–13.00	<b>Yulia IZVEKOVA et al</b>	Atmospheric Dunes as Possible Manifestation of Meteoric Dusty Plasma	15MS3-SB-11
13.00–14.00	LUNCH		
14.00–14.10	<b>Marina SHCHERBINA et al</b>	Preliminary Results of the Polarimetric Observation Program of NEAs at the 2.6-m Telescope of CrAO and the 2-m Telescope of the Peak Terskol Observatory	15MS3-SB-12

14.10–14.20	<b>Iliia KUZNETSOV et al</b>	Ultraviolet irradiation influence on the Lunar dust dynamics	15MS3-SB-13
14.20–14.30	<b>Mohamad ABDELAAL et al</b>	Electromagnetic Phenomena in Dust Particle Dynamics under Simulated Martian Atmosphere: An Experimental Study	15MS3-SB-14
14.30–14.40	<b>Alina MERKULOVA et al</b>	The Effect of Cometary Outbursts on the Orbits of Comets in the Oort Cloud	15MS3-SB-15
14.40–14.50	<b>Kristina LOBANOVA and Alexander MELNIKOV</b>	Influence of size and shape of an asteroid on perturbations in its rotational dynamics during close approach to the Earth	15MS3-SB-16
14.50–15.00	<b>Aleksandr TOLSTOY et al</b>	3D shape reconstruction of an asteroid from its light curves as a convex polyhedron	15MS3-SB-17
15.00–15.10	<b>Eduard KUZNETSOV et al</b>	Analysis of scenarios for the formation of the young Emilkwowski asteroid family	15MS3-SB-18
15.10–15.20	<b>Galina O. RYABOVA</b>	The PSP/WISPR dust trail and the Geminid stream	15MS3-SB-19
15.20–15.30	<b>Vladislav SIDORENKO</b>	Some remarks about the Earth's quasi-satellites population	15MS3-SB-20
15.30–15.40	<b>Gleb KUCHEROV et al</b>	Accumulation and recombination of radicals as an energy source for active processes in icybodies of the Solar System	15MS3-SB-21
15.40–15.50	<b>Andrey SHUGAROV and Boris SHUSTOV</b>	A system to detect day-time asteroids (SODA) of the "Milky Way" project	15MS3-SB-22
15.50–16.00	<b>Boris KONDRATYEV and V. S. KORNOUKHOV</b>	Secular evolution and stability of rings around rotationally asymmetrical bodies. Revisiting the problem	15MS3-SB-23
16.00–16.20	COFFEE-BREAK		
16.20–16.30	<b>Boris KONDRATYEV</b>	The new formula for the angular velocity of rotating equilibrium figures	15MS3-SB-24
16.30–16.40	<b>Maxim PUPKOV et al</b>	Construction of transfer trajectories of the spacecraft to asteroids passing near Sun-Earth libration points	15MS3-SB-25
16.40–16.50	<b>Yuri MEDVEDEV et al</b>	On the outbursts of the Centaur 174P/Echeclus	15MS3-SB-26
16.50–17.00	<b>Maxim NYRTSOV et al</b>	Analysis of the surfaces of celestial bodies applying equal-area projections of the triaxial ellipsoid	15MS3-SB-27

17.00–17.10	<b>Tatiana SALNIKOVA and E.I. KUGUSHEV</b>	Long-term presence of cosmic masses near libration points	15MS3-SB-28
17.10–17.20	<b>Roman ZOLOTAREV and Boris SHUSTOV</b>	On the parameters of NEOs encounters with the Earth	15MS3-SB-29
17.20–17.30	<b>Vladimir TCHERNYI and S.V. KAPRANOV</b>	Unsolved problems of gravitational models of the origin of Saturn's visible dense rings and how J. K. Maxwell's discovery in 1865 that dense rings are not solid, but consist of separate pieces of matter, can help in this	15MS3-SB-30

17.30–18.15

**POSTER SESSION,  
SESSION SMALL BODIES (INCLUDING COSMIC DUST)**

15 posters \* 3 min

<b>Maria SERGIENKO et al</b>	Connection of the April chi-Librids meteor shower with Near-Earth asteroids	15MS3-SB-PS-01
<b>Dmitry SHOKHRIN et al</b>	Low-frequency nonlinear dust-acoustic perturbations in the dustymagnetosphere of Saturn: Zakharov-Kuznetsov equation description	15MS3-SB-PS-02
<b>Stanislav KUZNETSOV and Vladimir BUSAREV</b>	Dust injection into the plasma sheath near the surface of active asteroids	15MS3-SB-PS-03
<b>Tatiana MOROZOVA and Sergey POPEL</b>	The influence of the magnetic field on the processes occurring in the dusty plasma of meteoroid tails	15MS3-SB-PS-04
<b>Yulia IZVEKOVA et al</b>	Mercurian dusty exosphere: effects of anomalous dissipation	15MS3-SB-PS-05
<b>Andrey DUBINSKY et al</b>	Water formation on asteroids and dusty plasma system above the asteroid's surface	15MS3-SB-PS-06
<b>Marina SHCHERBINA and D.A. KOVALEVA</b>	Spectral analysis and classification of near-Earth and Mars-crossing asteroids using Gaia DR3 Data	15MS3-SB-PS-07
<b>Valeria KHLESTUNOVA et al</b>	New map of Europa: Update from Juno mission data	15MS3-SB-PS-08
<b>Maksim KHOVRICHEV et al</b>	Astrometric remeasurement of Pulkovo photographic observations of the 433 Eros taken from 1900 to 1940	15MS3-SB-PS-09
<b>Maksim KHOVRICHEV et al</b>	Verification of the association between the 2002GJ8, 2016 NO16 asteroids and the August Draconids (AUD)	15MS3-SB-PS-10

<b>Vladimir EFREMOV et al</b>	Determination of the small meteor particles properties from observational data	15MS3-SB-PS-11
<b>Mirhusen NARZIEV and H.F. KHUJANAZAROV</b>	Streams and associations of meteoroids according to the results of radar observations in HisAO for January 1970	15MS3-SB-PS-12
<b>Vladimir VDOVICHENKO et al</b>	Asteroid (4) Vesta: spectrophotometric presuppositions of the presence of a large crater 20 years before its discovery by the Dawn spacecraft.	15MS3-SB-PS-13
<b>Nickolay PEROV and A.I. SMIRNOV</b>	A model of giant planets satellites mass distributions over the semimajor axes of the orbits	15MS3-SB-PS-14
<b>Nickolay PEROV and A. S. NIKOLAEVA</b>	On the evolution of initial circular orbits of comets with variable mass	15MS3-SB-PS-15

18.15–20.00

RECEPTION

10.00–15.20

# 6 EXTRASOLAR PLANETS SESSION

Convener: **Alexander TAVROV**  
conference hall, second floor

10.00–10.20	<b>Sergei IPATOV</b>	Migration of planetesimals in the TRAPPIST-1 and GLISSE 581 exoplanetary systems	15MS3-EP-01
10.20–10.40	<b>Alexander KROT</b>	Development of the analytical models of protoplanetary formation in extrasolar systems within the framework of the statistical theory	15MS3-EP-02
10.40–11.00	<b>Eduard KUZNETSOV and Alexander PERMINOV</b>	Study of stability of the compact planetary system K2-72	15MS3-EP-03
11.00–11.20	<b>Anastasiia IVANOVA et al</b>	The mass-period distribution of low-mass exoplanets discovered by the radial velocity method. Improvement of the observational selection correction method	15MS3-EP-04
11.20–11.40	<b>Vladislava ANANYEVA and Alexander TAVROV</b>	Website on exoplanets Planetary Systems (allplanets.ru)	15MS3-EP-05
11.40–12.00	COFFEE-BREAK		
12.00–12.20	<b>Ildar SHAIKHISLAMOVI et al</b>	Kinetic modelling of the Super-Hot Jupiter Kelt9b	15MS3-EP-06
12.20–12.40	<b>Anton KROTOV et al</b>	Magnetosphere of Osiris in the stellar wind stream	15MS3-EP-07
12.40–13.00	<b>Marina RUMENSKIKH et al</b>	Chemical diversity of exoplanetary atmospheres and its observational evidence	15MS3-EP-08
13.00–14.00	LUNCH		
14.00–14.20	<b>Anastasiia AVTAEVA et al</b>	A self-consistent model of the influence of the host star on the atmosphere of sub-neptune GJ3470b	15MS3-EP-09
14.20–14.40	<b>Roman EVDOKIMOV and Valery SHEMATOVICH</b>	Comparative analysis of the photoevaporation and core-powered mass-loss efficiency for the atmosphere of the young mini-neptune HD207496b	15MS3-EP-10
14.40–15.00	<b>Maksim GOLUBOVSKY et al</b>	Measurement of reaction rates of metastable helium atom for astrophysical applications	15MS3-EP-11
15.00–15.20	<b>POSTER SESSION, SESSION EXTRASOLAR PLANETS</b>		
	2 posters * 10 min		
	<b>Valery KOTOV</b>	Superfast exoplanets and motion of the Sun and Earth	15MS3-EP-PS-01
	<b>Elena BELENKAYA</b>	Magnetic exoplanets in the sub-Alfvénic stellar wind may act as a kind of interplanetary magnetic field collimator	15MS3-EP-PS-02

15.20–19.20

# 7 ASTROBIOLOGY SESSION

Convener: **Oleg KOTSYURBENKO**  
conference hall, second floor

15.20–15.40	<b>Vladimir KOMPANICHENKO</b>	Thermodynamic transformation of organic microsystems as an impetus for the emergence of life forms on Earth and other planets	15MS3-AB-01
15.40–16.00	<b>Sergey BULAT et al</b>	Thermophiles: the extraordinary extraterrestrials next door	15MS3-AB-02
16.00–16.20	<b>Oleg KOTSYURBENKO</b>	Systems approach to astrobiology	15MS3-AB-03
16.20–16.40	COFFEE-BREAK		
16.40–17.00	<b>Yuming FU et al</b>	Surface Bacterial Dynamics and Biosafety Assessment during the Lunar Palace 365 Bioregenerative Experiment	15MS3-AB-04
17.00–17.20	<b>Valery SHEMATOVICH et al</b>	Astrobiological issues of the auroral nitric oxide formation in the N <sub>2</sub> -O <sub>2</sub> atmospheres of the terrestrial-type planets	15MS3-AB-05
17.20–17.40	<b>Sohan JHEETA</b>	Reactive Oxygen Species: Possible Implications for the Emergence of Life	15MS3-AB-06
17.20–18.00	<b>Frank TRIXLER</b>	No problem with the water problem: using ubiquitous nanogeochemical conditions to achieve abiotic RNA synthesis in water	15MS3-AB-07
18.00–18.20	<b>Anatoliy K. PAVLOV</b>	Nearby Supernovas and Gamma Ray Bursts as possible sources the sharply increase of mutations rate and lethal effects for Earth's biosphere	15MS3-AB-08
18.20–18.40	<b>Mikhail ZARUBIN et al</b>	Biological researches in the deep underground facilities of Baksan Neutrino Observatory and it's relevance to astrobiology analogue studies	15MS3-AB-09
18.40–19.00	<b>Ximena ABREVAYA et al</b>	The EXO-UV program: latest advances of experimental studies to investigate the biological impact of UV radiation on exoplanets	15MS3-AB-10

19.00–19.20

## POSTER SESSION, SESSION ASTROBIOLOGY

2 posters \* 10 min

<b>Alexander TERTYSHNIKOV</b>	Variations of F10,7 on new dates of meteor shower maxima	15MS3-AB-PS-01
<b>Alexander GURIDOV et al</b>	Bacteria of the coolant fluid Triol from the active thermal control system of the International Space Station	15MS3-AB-PS-02