

# Overview 7M-S<sup>3</sup> Program

## The Seventh Moscow Solar System Symposium (7M-S<sup>3</sup>)

IKI RAS, 10-14 October 2016

	10 October	11 October	12 October	13 October	14 October	
10.00	<b>Opening Session</b>	<b>Session 2. Moon</b>	<b>Session 2. Moon: mapping in Luna-26</b>	<b>Session 4. Dust and dusty plasma in space</b>	<b>Session 7 dedicated to the memory of Robert W. Farquhar</b>	
10.20					<b>Session 8. Interstellar flights: New initiative</b>	
10.40						
11.00					<b>Session 1. Mars</b>	Coffee
11.20						
11.40				Coffee		Coffee
12.00						
12.20			Lunch			
12.40						
13.00				Lunch		Lunch
14.00						
14.20			<b>Session 3. Venus</b>			<b>Session 5. Astrobiology</b>
14.40						
15.00						
15.20						
15.40			Coffee		Coffee	
16.00						
16.20		<b>Session 6. Small Bodies</b>				
16.40						
17.00						
17.20						
17.40						
18.00						
18.20		<b>Poster Session</b>	Social events in Moscow	<b>Poster Session</b>	Concert	
18.40						
19.00		<b>Welcome party</b>		Social events in Moscow	Reception	Social events in Moscow
19.20						
19.40						
20.00						

## 7M-S<sup>3</sup> Scientific Program

<b>Monday, 10 October 2016</b>			
<b>OPENING SESSION</b>			<b>10.00-11.40</b>
<b>Convener: Lev ZELENYI</b>			
<b>7MS3-OS-01</b>	Lev Zelenyi	Milestones of the Russian Space Science Program for the Decade 2016-2025	10.00-10.30
<b>7MS3-OS-02</b>	James Green	NASA's Planetary Science Missions Present and Future Plans	10.30-11.00
<b>7MS3-OS-03</b>	ROSCOSMOS presentation		11.00-11.40
<b>Coffee-break</b>			11.40-12.00
<b>Session 1. MARS</b>			<b>12.00-18.00</b>
<b>Conveners: James HEAD, Oleg KORABLEV</b>			
<b>7MS3-MS-01</b>	Valery Shematovich et al	Electron precipitation at Mars: effect of crustal magnetic field	12.00-12.20
<b>7MS3-MS-02</b>	Eduard Dubinin et al	Ion fluxes and their routes at Mars. Mars Express and MAVEN observations	12.20-12.40
<b>7MS3-MS-03</b>	Mikhail Verigin and Galina Kotova	Oxygen loss from Mars: Earlier PHOBOS 2, recent MAVEN observations, and how to measure oxygen loss by in-situ ion measurements	12.40-13.00
<b>Lunch</b>			13.00-14.00
<b>7MS3-MS-04</b>	Vladimir Krasnopolsky	IRTF/CSHELL Observations of the CO Dayglow at 4.7 $\mu\text{m}$ , CO Mixing Ratio, and HDO/H <sub>2</sub> O on Mars	14.00-14.20
<b>7MS3-MS-05</b>	Anna Fedorova et al	Observations of water vapor in the Martian middle atmosphere on Mars-Express	14.20-14.40
<b>7MS3-MS-06</b>	James Head	Mars climate history: A geological perspective	14.40-15.00
<b>7MS3-MS-07</b>	Maxim Litvak et al	Global and local trends in observation of subsurface water in Gale crater from DAN/MSL data	15.00-15.20
<b>7MS3-MS-08</b>	Jordanka Semkova et al	Dosimetry investigations onboard ExoMars missions. Results from radiation measurements during ExoMars 2016 TGO cruise to Mars	15.20-15.40
<b>7MS3-MS-09</b>	Jose Luis Vazquez-Poletti et al	Martian Computing Clouds: A Two Use Case Study	15.40-16.00
<b>Coffee-break</b>			16.00-16.20
<b>7MS3-MS-10</b>	James Head et al	Mars human science exploration and resource utilization: The dichotomy boundary Deuteronilus Mensae exploration zone	16.20-16.40
<b>7MS3-MS-11</b>	Sierra Kaufman et al	Aluminum Phyllosilicates: Implications for Past Climate History of Mars	16.40-17.00
<b>7MS3-MS-12</b>	Adeene Denton and James Head	Fretted terrain origins and the problems of Arabia Terra, with a focus on stratigraphic and temporal relationships	17.00-17.20
<b>7MS3-MS-13</b>	Thomas Duxbury	Precision cartographic map of the ExoMars Schiaparelli landing site on Mars derived from Mars Reconnaissance Orbiter Context Camera images	17.20-17.40
<b>7MS3-MS-14</b>	Vladimir Gubenko et al	Parameters of saturated internal gravity waves identified in the Martian atmosphere from an analysis of Mars Global Surveyor radio occultation data	17.40-18.00
<b>POSTER SESSION (all sessions)</b>			<b>18.00-19.00</b>

**Tuesday, 11 October 2016**

**Session 2. MOON**

**10.00-18.00**

**Conveners: Igor MITROFANOV, Maxim LITVAK**

<b>7MS3-MN-01</b>	Anton Sanin et al	Lunar neutrons, as signatures of water	10.00-10.20
<b>7MS3-MN-02</b>	Timothy McClanahan et al	High concentration of hydrogen-bearing volatiles at the base of poleward-facing slopes in the Moon's large southern permanently shadowed regions	10.20-10.40
<b>7MS3-MN-03</b>	Daniela Rommel et al	Petrological mapping of regions in the South Pole-Aitken Basin	10.40-11.00
<b>7MS3-MN-04</b>	Mikhail Kreslavsky et al	Degradation of small craters in lunar highlands	11.00-11.20
<b>7MS3-MN-05</b>	Ekaterina Kronrod et al	Cold and hot models of the lunar mantle	11.20-11.40
<b>Coffee-break</b>			11.40-12.00
<b>7MS3-MN-06</b>	John Keller and N. Petro	Recent results of the Lunar Reconnaissance Orbiter mission	12.00-12.20
<b>7MS3-MN-07</b>	Boris Ivanov	Small lunar craters size-frequency distribution: degradation and widening	12.20-12.40
<b>7MS3-MN-08</b>	Lionel Wilson and James Head	Three-stage eruption sequence in lunar shield volcanoes and the production of magmatic foam	12.40-13.00
<b>Lunch</b>			13.00-14.00
<b>7MS3-MN-09</b>	Igor Mitrofanov	Status of Luna-25 landing site selection	14.00-14.20
<b>7MS3-MN-10</b>	Jessica Flahaut et al	Candidate landing sites for the Luna-Glob mission	14.20-14.40
<b>7MS3-MN-11</b>	Mikhail Ivanov et al	Geological characterization of the three most promising landing sites for the Luna-Glob mission	14.40-15.00
<b>7MS3-MN-12</b>	Sergey Filimonov and Sergey Aksenov	Heat radiation impact modeling on the spacecraft located on Moon polar regions	15.00-15.20
<b>7MS3-MN-13</b>	Vladimir Ermakov and D. Tufanov	Computer simulation of lunar surface sputtering for Luna-Resource mission	15.20-15.40
<b>7MS3-MN-14</b>	James Carpenter et al	Robotic precursors to human explorers: ESA lunar mission activities and studies	15.40-16.00
<b>Coffee-break</b>			16.00-16.20
<b>7MS3-MN-15</b>	Maria Zakharova and Evgeny Slyuta	The multi-scale mapping of Mons Rumker area for designing lunar rover's route purpose	16.20-16.40
<b>7MS3-MN-16</b>	Jürgen Oberst and P. Gläser	Lunar Polar Illumination and Implications for Future Landing Sites	16.40-17.00
<b>7MS3-MN-17</b>	Dmitry Moiseenko et al	Scientific objectives and parameters of ARIES-L instrument qualification model for Luna-Glob mission	17.00-17.20
<b>7MS3-MN-18</b>	Alexander Gusev et al	Tidal-librational dissipative dynamics of the Moon and radio/laser beacons VLBI/LRR/LLR technologies for ChangE-5/6, Luna-25/26/27, ILOM missions	17.20-17.40
<b>7MS3-MN-19</b>	Maxim Litvak et al	Instrumentation for polar regolith analysis of Luna-25 and Luna-27 spacecraft	17.40-18.00

**Wednesday, 12 October 2016**

**Session 2. MOON. SCIENCE AND PLANNING OF LUNAR SURFACE MAPPING IN LUNA-26 PROJECT**

**10.00-13.00**

**Conveners: Anatoly PETRUKOVICH, Ivan POLYANSKIY**

<b>7MS3-MN-20</b>	Anatoli Petrukovich et al	Russian Lunar orbiter mission	10.00-10.20
<b>7MS3-MN-21</b>	Vladimir Smirnov et al	Radar complex in the “Luna-Resource” project	10.20-10.40
<b>7MS3-MN-22</b>	Anton Sanin et al	LGNS instrument for Luna-26 mission	10.40-11.00
<b>7MS3-MN-23</b>	Ivan Polyanskiy et al	LSTK - lunar stereo topographic camera for "Luna-Resource-1» orbital mission	11.00-11.20
<b>7MS3-MN-24</b>	Mikhail Kreslavsky et al	Advanced global topographic mapping of the Moon: An important objective of upcoming lunar orbital missions	11.20-11.40

**Coffee-break**

**11.40-12.00**

<b>7MS3-MN-25</b>	Maria Zakharova and Evgeny Slyuta	Challenges of the 3D Moon surface mapping	12.00-12.20
<b>7MS3-MN-26</b>	Anatoly Zubarev et al	Priorities for imaging for lunar orbital missions considering further photogrammetric processing	12.20-12.40
<b>7MS3-MN-27</b>	Anatoly Zubarev et al	The effect of image compression on DTM quality	12.40-13.00

**Lunch**

**13.00-14.00**

**Session 3. VENUS**

**14.00-18.00**

**Convener: Ludmila ZASOVA**

<b>7MS3-VN-01</b>	Vladimir Krasnopolsky	Nitrogen Isotope Ratios in the Solar System and Its Evolution on Titan	14.00-14.20
<b>7MS3-VN-02</b>	Vladimir Krasnopolsky	On the iron chloride aerosol in the clouds of Venus	14.20-14.40
<b>7MS3-VN-03</b>	Sanjay Limaye	Ultraviolet Absorber in the Clouds of Venus	14.40-15.00
<b>7MS3-VN-04</b>	Denis Belayev et al	Sulphur bearing species at the night side of Venus' upper mesosphere	15.00-15.20
<b>7MS3-VN-05</b>	Alexandr Paveliev et al	Venera 9, 10 and Venera 15, 16 bistatic radar results: the Venus surface and lower atmosphere	15.20-15.40
<b>7MS3-VN-06</b>	Eugenia Guseva	Topographic characteristics of rift zones on Venus	15.40-16.00

**Coffee-break**

**16.00-16.20**

<b>7MS3-VN-07</b>	Chikako Hirose et al	The Japanese Venus orbiter AKATSUKI and its initial scientific results	16.20-16.40
<b>7MS3-VN-08</b>	Ludmila Zasova et al	JSDT :Scientific goals and architecture of the mission Venera-D	16.40-17.00
<b>7MS3-VN-09</b>	Mikhail Ivanov et al	The landing potential of terrains on the surface of Venus: prognosis for the Venera-D mission	17.00-17.20
<b>7MS3-VN-10</b>	Tibor Kremic et al	Venera-D: Technology Implications	17.20-17.40
<b>7MS3-VN-11</b>	Greg Lee et al	Venus Atmospheric Maneuverable Platform (VAMP)- Air Vehicle Concept and Entry CONOPs	17.40-18.00

**POSTER SESSION (all sessions)**

**18.00-19.00**

**Thursday, 13 October 2016**

**Session 4. DUST AND DUSTY PLASMA IN SPACE**

**10.00-13.00**

**Conveners: Alexander ZAKHAROV, Mihaly HORANYI**

<b>7MS3-DP-01</b>	Sergey Popel and Lev Zelenyi	Dusty plasmas in the solar system: recent developments, advances, and unsolved problems	10.00-10.20
<b>7MS3-DP-02</b>	Oleg Petrov et al	Coulomb “Explosion” of Dust Cluster under Microgravity	10.20-10.40
<b>7MS3-DP-03</b>	Mihaly Horanyi et al	The lunar dust environment: the effects of impacts and near-surface plasmas	10.40-11.00
<b>7MS3-DP-04</b>	Nikolay Borisov et al	The role of the inner radiation belt in dust grains lofting from the Jupiter’s moons Thebe and Amalthea	11.00-11.20
<b>7MS3-DP-05</b>	Tatiana Salnikova et al	On the probabilistic model of the Kordylewski cosmic dust clouds	11.20-11.40

**Coffee-break**

**11.40-12.00**

<b>7MS3-DP-06</b>	Fabrice Cipriani et al	Simulation of the dusty plasma environment of 65803 Didymos for the Asteroid Impact Mission (AIM)	12.00-12.20
<b>7MS3-DP-07</b>	Andrey Divin et al	Three dimensional kinetic Particle-in-Cell simulation of the 67P environment	12.20-12.40
<b>7MS3-DP-08</b>	Iliia Kuznetsov et al	Lunar dusty plasma and spacecraft instruments interaction: SPIS-Dust simulation	12.40-13.00

**Lunch**

**13.00-14.00**

**Session 5. ASTROBIOLOGY, LABORATORY SIMULATIONS AND ANALOG ENVIRONMENTS**

**14.00-16.00**

**Convener: Elena VOROBYOVA**

<b>7MS3-AB-01</b>	Nikita Demidov	Where to look for life on Mars – the view from cryobiosphere of Earth	14.00-14.15
<b>7MS3-AB-02</b>	Mojdeh Dalir Sharami and Saleheh Ebadirad	Martian evolution and habitability: From the planet formation to the Possibility of DNA and RNA synthesis on the planet Mars	14.15-14.30
<b>7MS3-AB-03</b>	Georgi Managadze	The Actual Problems of Astrobiology: From emergence and search till detection and identification of life	14.30-14.45
<b>7MS3-AB-04</b>	Maxim Zaitsev et al	An estimate of a qualitative composition of «exogenous» planetary surface organics by the study of model impact-induced transformation of carbonaceous meteorites	14.45-15.00
<b>7MS3-AB-05</b>	Sergei Ipatov and Mikhail Marov	Delivery of water and planetesimals from the feeding zone of Jupiter and Saturn to forming terrestrial planets	15.00-15.15
<b>7MS3-AB-06</b>	Vladimir Busarev	Where should we look for relics of an extinct primitive life?	15.15-15.30
<b>7MS3-AB-07</b>	Oleg Kotsyurbenko	Microbial community of the upper soil layer of Negev desert as the model microbial system for astrobiological experiments in the planned mission Phobos-Grunt 2	15.30-15.45
<b>7MS3-AB-08</b>	Natalia Khamidullina et al	The planetary protection requirements fulfillment during the launch campaign of the ExoMars-2016 mission	15.45-16.00

**Coffee-break**

**16.00-16.20**

**Session 6. SMALL BODIES****Convener: Alexander BASILEVSKY****16.20-18.00**

<b>7MS3-SB-01</b>	Sergey Efimov and Vladislav Sidorenko	Intermittency in dynamics of resonant Kuiper belt objects	16.20-16.35
<b>7MS3-SB-02</b>	Evgenij Zubko et al	Why comets reveal various positive polarization?	16.35-16.50
<b>7MS3-SB-03</b>	Peter Wurz et al	Chemical composition of the semi-volatile grains of comet 67P/Churyumov-Gerasimenko	16.50-17.05
<b>7MS3-SB-04</b>	Yuri Skorov et al	The microphysical properties of the dust particles on 67P/CG nucleus from the MIRO data	17.05-17.20
<b>7MS3-SB-05</b>	Sergey Krasilnikov et al	Pinnacles on the 67P/Churyumov-Gerasimenko comet nucleus	17.20-17.35
<b>7MS3-SB-06</b>	Alexander Basilevsky et al	Graininess of the material of the comet 67P nucleus as deduced from analysis of the Rosetta NavCam, Osiris and ROLIS images	17.35-17.50
<b>7MS3-SB-07</b>	Lev Zelenyi and Leonid Ksanfomality	Does regional surface morphology of comets 67P/CG and 1P/Halley carry any traces of their origin in low velocity collisions?	17.50-18.00

**Friday, 14 October 2016**

**Session 7. SESSION DEDICATED TO THE MEMORY OF  
ROBERT W. FARQUHAR**

**10.00-11.00**

**Convener: Natan EISMONT**

<b>7MS3-RF-01</b>	David Dunham et al	Robert Farquhar's Ideas for Human Exploration of Space	10.00-10.20
<b>7MS3-RF-02</b>	David Dunham	Robert Farquhar's Impressive Space Exploration Legacy	10.20-10.40
<b>7MS3-RF-03</b>	Atila Poro	Grazing Asteroid Occultation	10.40-11.00

**Session 8. INTERSTELLAR FLIGHTS: NEW INITIATIVE**

**11.00-13.00**

**Convener: Lev ZELENYI**

<b>7MS3-IF-01</b>	Simon Worden	The Breakthrough Initiatives - The Search for Life in the Universe and Mankind's First Interstellar Voyage	11.00-11.40
<b>Coffee-break</b>			11.40-12.00
<b>7MS3-IF-02</b>	Louis Friedman et al	A Mission to the Solar Gravity Lens Focus	12.00-12.20
<b>7MS3-IF-03</b>	Vyacheslav Turyshev et al	Direct Multipixel Imaging of an exo-Earth with a Solar Gravitational Lens Telescope	12.20-12.40
<b>7MS3-IF-04</b>	Helen Popova et al	On the stability of nanocraft orientation while illuminated by intense laser beam	12.40-13.00

**Lunch**

**13.00-14.00**

**Session 9. FUTURE MISSIONS AND NEW TECHNIQUES**

**14.00-18.00**

**Conveners: Oleg KORABLEV, Thomas DUXBURY**

<b>7MS3-FM-01</b>	Dmitri Skulachev	PAT-M Radiometer Onboard the ExoMars-2020 Lander. Calibration Procedure and Possibility of Martian Atmosphere Temperature Measurements During a Dust Storm	14.00-14.20
<b>7MS3-FM-02</b>	Sergey Aseev et al	Gas-analytical chromatography system for mission "ExoMars 2020"	14.20-14.40
<b>7MS3-FM-03</b>	Thomas Duxbury et al	Mars Express OMEGA and HRSC: important datasets for MMX planning, site selection and operations	14.40-15.00
<b>7MS3-FM-04</b>	Adeene Denton et al	Tectonic history of Enceladus's South Polar Terrain and its ties to the formation of the tiger stripe fractures	15.00-15.20
<b>7MS3-FM-05</b>	Anton Butenko and Sergey Aksenov	Investigation of possibility of using melting probes for exploration of icy satellites	15.20-15.40
<b>7MS3-FM-06</b>	Pavel Klimov et al	The development of reflective optical systems based on nanocomposite structures for space research	15.40-16.00
<b>Coffee-break</b>			16.00-16.20
<b>7MS3-FM-07</b>	Mikhail Mishchenko	Active remote sensing of planetary atmospheres and surfaces	16.20-16.40
<b>7MS3-FM-08</b>	Kirill Zakharchenko et al	Radiation monitor based on diamond detectors for long-term space missions	16.40-17.00
<b>7MS3-FM-09</b>	Ilya Kuznetsov et al	Dust Analyzer developing for Russian Lunar lander mission	17.00-17.20
<b>7MS3-FM-10</b>	Alexander Tavrov and Leonid Ksanfomality	On unusual properties of the KIC 8462852 satellites (KEPLER mission heritage)	17.20-17.40
<b>7MS3-FM-11</b>	Markiy Chubey et al	Orbital Stellar Stereoscopic Observatory Project: motivations and autonomous navigation in the heliocentric transfer and operational orbits	17.40-18.00



## Poster Session

10 October 18.00-19.00

12 October 18.00-19.00

### Mars

<b>7MS3-PS-01</b>	Anna Fedorova et al	Long-term O <sub>2</sub> nightglow observations on Mars by SPICAM/ME <sub>x</sub>
<b>7MS3-PS-02</b>	Ekaterina Grishakina	Cryological mapping of Mars
<b>7MS3-PS-03</b>	Ashley Horan and James Head	Late Noachian Icy Highlands Climate Model: Exploring the possibility of transient melting and fluvial/lacustrine activity through peak temperatures
<b>7MS3-PS-04</b>	Erica Jawin and James Head	Global patterns of paraglacial activity in the martian mid-latitudes
<b>7MS3-PS-05</b>	David Weiss and James Head	Hellas Basin Floor, Mars: Is the Honeycomb Terrain Formed by Salt or Ice Diapirism?
<b>7MS3-PS-06</b>	M. Pilar Velasco et al	Modelization and simulations of the atmospheric dust dynamic through Fractional Calculus
<b>7MS3-PS-07</b>	Sergey Voropaev	Phobos evolution under the tidal action of Mars
<b>7MS3-PS-08</b>	Alexey Batov et al	Static stresses estimates in Mars with an elastic mantle
<b>7MS3-PS-09</b>	Vladimir Zharkov and Tamara Gudkova	On the model structure of the gravity field of Mars
<b>7MS3-PS-10</b>	Alexander Kosov et al	GARS instrument - an imitator of Exomars-2016 TGO transmitter

### Moon

<b>7MS3-PS-11</b>	Vladislav Tret'aykov	Scientific program of Luna-25 and Luna-27 landers
<b>7MS3-PS-12</b>	James Head et al	Ina pit crater: Origin as a drained summit lava lake and magmatic foam extrusions modified by seismic sieving
<b>7MS3-PS-13</b>	James Cassanelli and James Head	Did the Orientale Impact Melt Sheet Undergo Large-Scale Igneous Differentiation by Crystal Settling?
<b>7MS3-PS-14</b>	Sierra Kaufman et al	Mineral associations in enstatite chondrites: possible insights into minerals on Mercury
<b>7MS3-PS-15</b>	Ariel Deutsch et al	Constraining the ages of ice deposits at Mercury's north polar region: implications for water-ice delivery mechanisms
<b>7MS3-PS-16</b>	Victor Kronrod et al	Lunar crustal porosity, thermal conductivity and uranium concentration in the crust and mantle
<b>7MS3-PS-17</b>	Evgeny Slyuta et al	Preliminary data on age of Mons Rumker region
<b>7MS3-PS-18</b>	Evgeny Slyuta	Project «Lunar Robot-Geologist»: concept, scientific problems, scientific equipment, technical configuration
<b>7MS3-PS-19</b>	Vladislav Makovchuk et al	Experimental research of thermal sensors using control samples of lunar soil imitators
<b>7MS3-PS-20</b>	Ekaterina Grishakina et al	Imitators of the lunar soil for large-scale field experimental research
<b>7MS3-PS-21</b>	Svetlana Pugacheva et al	The natural resources of the Lunar Procellarum KREEP Terrane
<b>7MS3-PS-22</b>	Svetlana Pugacheva et al	On the possibility of the existence of deposits of volatiles compounds in the area northwest of the Boguslawsky crater



<b>7MS3-PS-23</b>	Yangxiaoyi Lu and Vladislav Shevchenko	Relation between magnetic field and dust distribution on the lunar surface
<b>7MS3-PS-24</b>	Tamara Gudkova et al	Cutoff frequency – momentum scaling law for impacts inverted from Apollo seismic data
<b>7MS3-PS-25</b>	Alexandra Heffels et al	New Velocity-Depth Profiles from Re-Evaluation of Apollo 17 Lunar Seismic Profiling Experiment
<b>7MS3-PS-26</b>	Arne Grumpe et al	Illumination dependent behavior of the lunar 3 $\mu\text{m}$ absorption band depth in the lunar crater Dryden
<b>7MS3-PS-27</b>	Jan Deca et al	Solar Wind Interaction with Lunar Magnetic Anomalies: Reiner Gamma
<b>7MS3-PS-28</b>	Mikhail Sinitsyn	Analysis of epithermal neutron flux from Bouguer anomalies
<b>7MS3-PS-29</b>	Parya Abouhamzeh	Studying Moon's edge with occultation methods
<b>7MS3-PS-30</b>	Oleg Khavroshkin and V. Tsyplakov	Moon as a Giant Detector for Neutrino Streams from Pulsars
<b>7MS3-PS-31</b>	Gennady Kochemasov	The Moon and Phobos: specific responses of two satellites moving off and nearer their respective planets
<b>7MS3-PS-32</b>	Gennady Kochemasov	Galactic trace on the lunar surface: intercrossing short wave folding in the Mare Imbrium
<b>7MS3-PS-33</b>	Arthur Zagidullin et al	Theory rotational of the Moon in the framework of the “main problem”
<b>7MS3-PS-34</b>	Michael Shpekin et al	Orbital images of high resolution and their role in the study of the matter state in lunar craters

### **Moon. Science and planning of lunar surface mapping in LUNA-26 project**

<b>7MS3-PS-35</b>	Alexander Kokhanov et al	Integral automated GIS-algorithm for complex analysis of planetary surface and landing site characterization
<b>7MS3-PS-36</b>	Natalia Kozlova et al	Lunar rover localization method using joint processing of original surface images with artificially modelled ones
<b>7MS3-PS-37</b>	Andrei Garov et al	Unified approach to building software for operational planning of Lunar surface imaging and providing broad access to resulted images using 3D web-GIS

### **Venus**

<b>7MS3-PS-38</b>	Mikhail Luginin et al	Analysis of upper haze of Venus from Venus Express SPICAV-IR data
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<b>7MS3-PS-39</b>	Dmitry Gorinov and Ludmila Zasova	Oxygen nightside airglow on Venus in relation to atmospheric dynamics based on VIRTIS-M observations
<b>7MS3-PS-40</b>	Michael Bondarenko and Anatoly Gavrik	On Possible GW Origin Of “Meteoric” Layers in Venusian Ionosphere
<b>7MS3-PS-41</b>	Samaneh Shamyati	Mercury-Sun distance from the Transit of Mercury
<b>7MS3-PS-42</b>	Daria Evdokimova et al	Studying of cloud variations using night observations data of SPICAV IR in 2016-2011
<b>7MS3-PS-43</b>	Alexey Ekonomov et al	Superrotation study in the atmosphere of Venus by means of balloon probes
<b>7MS3-PS-44</b>	Igor Khatuntsev et al	Winds in the middle cloud deck from the near-IR imaging by the Venus Monitoring Camera onboard Venus Express
<b>7MS3-PS-45</b>	Marina Patsaeva and Igor Khatuntsev	Influence of Venus topography on variations of zonal and meridional winds according to measurements in UV and near-IR channels of VMC/Venus Express

#### **Dust and dusty plasma in space**

<b>7MS3-PS-46</b>	Sergey Popel et al	Adiabatic trapping of electrons and localized wave structures in lunar dusty plasmas and Earth’s mesosphere
<b>7MS3-PS-47</b>	Sergey Popel and T. Morozova	Waves in the region of interaction between Earth’s magnetosphere and lunar dusty plasma
<b>7MS3-PS-48</b>	Yulia Izvekova and Sergey Popel	Dust vortex motions in the atmospheres of Earth and Mars

#### **Astrobiology, laboratory simulations and analog environments**

<b>7MS3-PS-49</b>	Elena Vorobyova et al	Life in the Alien Environments: Simulation of the Physical Parameters of Extraterrestrial Habitats on the Earth Analog Environments
<b>7MS3-PS-50</b>	Anna Dunaeva et al	Physical and thermal conditions for existence of liquid water oceans within icy satellites Callisto and Titan
<b>7MS3-PS-51</b>	Jessica Flahaut et al	Remote sensing and in situ mineralogic survey of the Chilean salars: An analog to Mars evaporate deposits?
<b>7MS3-PS-52</b>	Victor Tejfel et al	Jupiter: new confirmations of the ammonia absorption depression at low northern latitudes
<b>7MS3-PS-53</b>	Nataliya Zubko et al	Light scattering by chemically heterogeneous planetary regolith

<b>7MS3-PS-54</b>	Vladimir Cheptsov et al	Influence of Gamma Irradiation in Simulated Martian Conditions on Catalase Activity and Reactivity of Exometabolites of <i>Kocuria rosea</i> and <i>Arthrobacter polychromogenes</i>
<b>7MS3-PS-55</b>	Vladimir Cheptsov et al	Limits of Resistance of Soil Microbial Communities to Impact of Gamma Radiation
<b>7MS3-PS-56</b>	Ilya Kuznetsov and E. Lisin	Ground-Based Dusty Exosphere simulation chamber for the developing and calibration of Lunar Lander instruments
<b>7MS3-PS-57</b>	Ilya Digel et al	Neural Network Based Simulations for Autonomous Exploration of the Ocean Floor by Robotic Systems
<b>7MS3-PS-58</b>	Ilya Digel et al	Differential Optical Detection of “Black Smokers” Sulfur Compounds Using Self-Organizing Maps
<b>7MS3-PS-59</b>	Tatiana Borisova et al	Enhancement of inorganic Martian dust simulant with carbon component and its effects on key characteristics of glutamatergic neurotransmission
<b>7MS3-PS-60</b>	Margarita Kruchkova et al	Can the Fungal Communities of the Earth Deserts Survive in Simulated Martian Conditions?
<b>7MS3-PS-61</b>	S. Shashkovskiy et al	Surface decontamination of “Exomars-2020” martian landing module elements by pulsed UV irradiation

### Small Bodies

<b>7MS3-PS-62</b>	Yuri Skorov et al	A model of short-lived outbursts on the 67P/CG from fractured terrains in the Anukhet region
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### Future missions and new techniques

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<b>7MS3-PS-65</b>	Vladimir Gromov and A.Kosov	The Ranging Accuracy of the Radioscience Experiment with the Radio-Beacon Transponder in Comparison with Laser Ranging
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