Workshop Program

Wednesday, September 11th to Friday, September 13th, Observatoire Midi-Pyrénées			
Introductory talks + setting the stage **Chairperson: Véronique Dehant**			
10'	Welcome – biodetectors: applications to space	Philippe Louarn	v
10'	Introduction to the workshop	Michel Blanc	v
20'	Solar-system-exoplanet synergies - general approach and programmatic landscape	Heike Rauer	v
20'	The heliosphere: Lessons learned from Voyager, Cassini, IBEX about our home in the galaxy	Merav Opher	v
20'	Horizon 2061: from overarching science goal to specific science objectives	Michel Blanc	v

Session 1 - From science questions to key measurements **Chairperson: Heike Rauer**			
20'	Origin and early formation of planetary systems: link between disks and planetary systems architectures	Clément Baruteau	v
20'	Composition and Interior structure of solar and extrasolar giant planets	Nadine Nettelmann, Ravit Helled	v
20'	From the exploration of habitable worlds to the detection of life	Felipe Gomez Gomez	v
20'	**KEYNOTE TALK:** The Exploration and Investigation of Solar System Formation and Evolution	Scott Bolton	v

Session 2 - From representative missions to key technical requirements **Chairpersons: Ralph McNutt, Pierre Bousquet**			
15'	Planetary science objectives for missions to the Earth-Moon system	Bernard Foing	v
15'	Critical scientific space missions to Venus in the Horizon 2061 perspective - the role and feasibility of a sample return mission	G. Berger, E. Marcq, P. Pinet	v
15'	Mars: Sample return and beyond	Sylvestre Maurice	v
15'	Concept Study of Comets and Asteroids Exploration by Small Spacecraft: Towards Revisiting Comet Halley	N. Ozaki et al.	v
15'	Sample return of primitive matter from the outer solar system	P. Vernazza, P. Beck	v
15'	Direct Exploration of Outer Solar System using Solar Power Sail	O. Mori	v
15'	Exploration of giant planets systems	N. André, M. Blanc	v
15'	Joint Europa Mission (JEM) A multiscale, multi-platform mission to characterize Europa's habitability and search for extant life	M. Blanc, O. Prieto-Ballesteros, N. André et al.	v
15'	In situ exploration of the giant planets: a Horizon 2061 perspective Part 1 Part 2	O. Mousis	v
15'	Missions to the Trans-Neptunian populations and interstellar objects	M. Bannister	v
15'	Near-Term Interstellar Probe: The First Dedicated Step	R. McNut et al.	v
Poster	Pathfinder for Solar flAre Monitoring Explorer (SAME-Pathfinder) Simulating space missions with the SurRender software	Y. Du J. Lebreton	v

Session 3 - Foresight visions and programs from agencies and industry Chairpersons: Kyeong Ja Kim, Michel Blanc			
15'	JAXA's planetary exploration plan for the next decades	N. Ozaki, Y. Toukaku	v
15'	Progress and Prospects of Unmanned Deep Space Exploration in China	L. Ming Read by L. GUO	v
15'	KIGAM's new direction for lunar science and exploration in conjunction with lunar and planetary ISRU	K.J. Kim	v
15'	**KEYNOTE TALK:** Eurospace recommendations for Human Presence & Exploration	L. Gatti	v
15'	OHB Planetary Exploration Enabling Technologies Involvements	M. Berg	v
15'	The view from TAS	M - A. Perino	N/A

Session 4 - Enabling technologies Chairpersons: Manuel Grande, Linli Guo			
A- Scientific instrumentation for the future			
15'	**KEYNOTE TALK:** Results from the Chang'e 4 far-side Lunar lander: the plant growth experiment	G. Xie	v
15'	Recent advances in in-situ miniaturized geochemical and Life Detection Instrumentation	J-A. Rodriguez Manfredi (remote)	v
15'	Medium and long-term perspectives of radio sounding and radar instrumentation techniques for the study of the surfaces and sub-surfaces of solar system objects	A. Herique, W. Kofman and S. Zine	v
15'	Medium and long-term perspectives of seismology for the study and characterization of planetary and satellite interiors	D. Mimoun, R. Garcia and P. Lognonné	v
15'	Prospects of space geodesy and gravimetry for the future study of planetary and satellites interiors and geodynamics	A. Genova	v
15'	The mid and long-term future of mass spectrometry in solar system exploration	H. Waite (given by S. Bolton)	v
B- Platform and system level technologies			
15'	Exploration mission concepts based on miniaturized technologies, perspectives drawn from the LPCM 13 conference	P. Bousquet	v
15'	Exploration technologies for advanced small platforms reaching to extreme environments	M. Blanc, **L. Guo**, J. Huang	v
15'	The potential of electric propulsion: research at LPP and in the ANR industrial chair Poseidon	Bourdon A., P. Chabert	v
15'	In space manufacturing and assembly of large systems	C. Figus	v
15'	Relevant technologies and validation assumptions for ISRU	M. Blanc, **L. Guo**	v
15'	The role of on-board autonomy in future space exploration: ERGO's autonomous long traverse achievements in Morocco desert	M. Graziano (given by Jesús-David Jordan)	v
15'	Architecture and technology challenges of the Comet Interceptor Mission	M. Bannister	v
(from EGU 2019)	Space Technology and Instrumentation for the Second Half of the Twenty First Century: *Visions for 2050 – 2061*	M. Grande	v

Session 5 - Infrastructures and services for the future – part 1 Chairperson: N. Ozaki			
15’	Exploring Space through Sample Return Missions: How, Where, and What Do We Do with the Rocks?	A. Hutzler	v
15’	Exploring Space through Sample Return Missions: Planetary Protection and Contamination Control and Knowledge.	A. Hutzler	v
15’	Future infrastructures to monitor Solar-System-wide space weather	N. André	v
15’	Planetary plasmas data systems: towards the future	Vincent Génot	v
Session 5 - Infrastructures and services for the future – part 2 Lunar Exploration and Horizon 2061 special event at ISAE-Supaéro (18:30 – 21:00) Chairperson : Stéphanie Lizy-Destrez			
30’	From lunar outposts to the Moon Village	B. Foing	
30’	The cislunar gateway as an infrastructure for lunar and solar system exploration	S. Lizy-Destrez	v

Session 6 – Students and early career professionals contributions Chairpersons: Gengxin XIE, David Mimoun			
15’	Towards an origami based compliant modular system for deep space exploration: the next generation of cubesat	S. Bonardi et al.	v
15’	The Cathalus Mission Concept to Occator Crater at Ceres: Science, Operations and Systems Design	G. Acciarini, P. Panicucci et al.	v
15’	TELEOP: Impact of confinement and isolation on crew performances during long-duration missions	V. Martín Estraña et al.	v
15’	CaLIBSow: Chemical Analysis with LIBS for Ocean Worlds. An instrument concept for Outer Solar System subsurface oceans	B. Chide	v
15’	Assessing the Habitability of an Active Ocean World: the Etna Mission Concept to Enceladus' Tiger Stripes	P. Panicucci et al.	v
15’	Remote Localisation and Characterisation of Venus' Seismic and Volcanic Events through a Network of Balloon-Based Instruments	L. Martire et al.	v
15’	Lunar Outpost Sustaining Human Space Exploration by Utilizing In-Situ Resources with a Focus on Propellant Production	P. Guardabasso, D. Gaudin et al. (ISAE)	v
15’	Sample Return Mission to Enceladus	E. Clavé et al.	v

Session 7 – Implementation, international collaboration, workshop synthesis and reporting Chairpersons: Maria Teresa Capria, R. Mc Nutt			
20’	**Keynote talk:** Enabling power and methodologies of international cooperation	E. Ammannito	v
10’	Workshop summary document	M. Blanc	v
30’	Final round-table discussion	*Moderators :* M. T. Capria, R. Mc Nutt	