

## TUESDAY, OCTOBER 14TH

### Session: Plenary

09:15 Welcome & Introduction

09:40 "Optical Technologies in Canadian Space Programs"  
Wanping ZHENG, *Canadian Space Agency*

10:10 "Optics in ESA future missions : Performance requirements and Technology Challenges"  
Frederic SAFA, *ESA*

### 10:40 COFFEE BREAK

11:00 "JAXA's Contribution to GEOSS"  
Masanori HOMMA, *JAXA*

11:30 "The French Program for Earth Observation"  
Benoît Boissin, *CNES*  
"The French Program for Universe Sciences"  
Jean-Louis Counil, *CNES*

12:00 "NASA and International Cooperation: The View Ahead"  
William BARRY, *NASA*

#### Session 1 : Innovative Telescopes

#### Session 4 : Imagers

14:00 INVITED : "Temporal Hypertelescope"  
F. REYNAUD, *University of Limoges*

14:00 "The High Resolution Optical Instruments for the  
Pleiades HR Earth Observation Satellites"  
C. SINGER, *Thales Alenia Space*

14:30 "Astrophysical Targets of the Fresnel Imager"  
Laurent KOEHLIN, *CNRS*

14:20 "Design and Breadboarding Activities of the Second-  
generation Global Imager (SGLI) on GCOM-C"  
Y. YUI, *JAXA*

14:50 "LAUE LENS: The Challenge of Focusing Gamma  
Rays"  
Nicolas BARRIERE, *INAF - IASF Roma*

14:40 "The GOCI Instrument on COMS Mission - The First  
Geostationary Ocean Colour Imager"  
François FAURE, *Astrium SAS Satellite*

15:10 "A Technology Demonstrator for Development of  
Ultra-lightweight, Large Aperture, Deployable  
Telescope for Space Applications"  
Alessandro ZUCCARO MARCHI, *CNR-INO*

15:00 "Multi-Spectral Optical Scanners for Commercial  
Earth Observation Missions"  
K. SCHRÖTER, *Jena-Optronik GmbH*

### 15:20 COFFEE BREAK

#### Session 2 : MEMS

#### Session 5 : Imagers

15:50 "Electrostatically Operated Optical Microshutter Array  
for a Miniature Integrated Optical Spectrometer"  
S. ILIAS, *INO*

15:50 "Calibration of the VEN $\mu$ S super-spectral Camera"  
Jeremy TOPAZ, *Elbit System Ltd.*

16:10 "Dynamic Diffraction Gratings and a Spectrometer  
Demonstrator"  
Ville Veikko AALLOS, *VTT*

16:10 "Accuracy Assessment of ALOS Optical Instruments:  
PRISM and AVNIR-2"  
T. TADONO, *Japan Aerospace Exploration Agency*

16:30 "MEMS Tunable Grating Micro-Spectrometer"  
Maurizio TORMEN, *CSEM*

16:30 "The Multispectral Instrument of the Sentinel2  
Program"  
V. CAZAUBIEL, *EADS Astrium*

16:50 "MOEMS Devices Designed and Tested for Future  
Astronomical Instrumentation in Space"  
Frederic ZAMKOTSIAN, *CNRS*

16:50 "Development of Detailed Design Concepts for the  
Earthcare Multi-Spectral Imager"  
Dan LOBB, *Surrey Satellite Technology Ltd*

### 17:10 BREAK

Session 3 : Cooling System		Session 6 : Imagers	
17:20	"Micromachined Joule-Thomson Coolers for Cooling Low-temperature Detectors and Electronics" H.J.M Ter BRAKE, <i>University of Twente</i>	17:20	"NAOMI Instrument: A Product Line of Compact & Versatile Cameras Designed for High Resolution Missions in Earth Observation" Philippe LUQUET, <i>EADS Astrium</i>
17:40	"Space Cryogenics at CEA-SBT" L. DUBAND, <i>CEA Grenoble</i>	17:40	"MET Image - An Innovative Multi-Spectral Imaging Radiometer for the Eumetsat Polar System Follow-On Satellite Mission" Matthias ALPERS, <i>DLR German Space Agency</i>
18:00	"Air Liquide's Space Pulse Tube Cryocooler Systems" T. TROLLIER, <i>Air Liquide - DTA</i>	18:00	"METIS, the Multi Element Telescope for Imaging & Spectroscopy: an Instrument Proposed for the Solar Orbiter Mission" G. NALETTO, <i>University of Padova - CNR-INFN LUXOR</i>
18:30 WELCOME COCKTAIL			

WEDNESDAY, OCTOBER 15TH			
Session 7 : Technologies in Telescopes		Session 11 : LISA	
08:50	INVITED : "Performance of Lightweight Large C/SIC Mirror" Yukari Y.YUI, <i>Japan Aerospace Exploration Agency</i>	08:50	INVITED : "LISA and LISA Pathfinder: Laser Interferometry in Space" K. DANZMANN, <i>A.Einstein Institut Hannover</i>
09:20	"Cesic Optomechanical Technology last Development Results" Christophe DEVILLIERS, <i>Thales Alenia Space</i>	09:20	"Opto-Mechanical Architecture of the LISA Instrument" Dennis WEISE, <i>EADS Astrium GmbH</i>
09:40	"Highly Light-Weighted Zerodur Mirrors" Stéphanie BEHAR-LAFENETRE, <i>Thales Alenia Space</i>	09:40	"A High Sensitivity Heterodyne Interferometer as a possible optical readout for the LISA Gravitational Reference Sensor and its Application to Technology Verification" Martin GOHLKE, <i>EADS Astrium GmbH</i>
10:00	"Directly Polished Light Weight Aluminium Mirror" Rik ter HORST, <i>Nova Astron</i>	10:00	"Laser Modulator for LISA Pathfinder" Christoph VOLAND, <i>Oerlikon Space AG</i>
10:20	"Space Optics with Silicon Wafers and Slumped Glass" R. HUDEC, <i>Astronomical Institute - Academy of the Sciences of the Czech Republic</i>	10:20	"Molecular Laser Stabilization for LISA" H. HALLOIN, <i>University of Paris</i>
10:40 COFFEE BREAK			
Session 8 : Auxillary Sensors		Session 12 : Fiber Optics Communication	
11:00	"Sturdy as a House with Four Windows. The Star Tracker of the Future" Tom DUIVENVOORDE, <i>TNO Science and industry</i>	11:00	"High-Speed ADC and DAC Modules with Fibre Optic Interconnects for Telecom Satellites" Veli HEIKKINEN, <i>VTT</i>
11:20	"A Star Tracker Insensitive to Stray Light Generated by Radiation Sources Close to Field of View" Lisa GAMBICORTI, <i>CNR-INO</i>	11:20	"Optoelectronic Link for Optical Satellite Harnessing Substitution in Space Communications" Julian BLASCO, <i>DAS Photonics</i>
11:40	"HYDRA Multiple Head Star Sensor and its In-Flight Self-Calibration of Optical Heads Alignment" Laurent MAJEWSKI, <i>EADS-SODERN</i>	11:40	"A 10Gbps Optical Burst Switching Network Incorporating Ultra-Fast (5ns) Wavelength Switched Tunable Laser Sources" Neil RYAN, <i>Intune Networks</i>

12:00	"From Space Qualified Fiber Optic Gyroscope to Generic Fiber Optic Solutions Available for Space Application" Thomas BURET, <i>IXSPACE</i>	12:00	"Assessment of Commercial Optical Amplifiers for Potential Use in Space Applications" Juan BARBERO, <i>Alter Technology Group Spain</i>
<b>12:20 LUNCH</b>			
<b>Session 9 : Infrared Interferometry</b>		<b>Session 13 : Fiber / Free Space Optic</b>	
14:00	INVITED : "Technology Challenges for Exoplanet Detection with Mid-IR Interferometry" Peter R. LAWSON, <i>NASA</i>	14:00	INVITED : "The Optical Fiber Array Bundle Assemblies for the NASA Lunar Reconnaissance Orbiter; Evaluation Lessons Learned for Flight Implementation from the NASA Electronic Parts and Packaging Program" Melanie N. OTT, <i>NASA</i>
14:30	"PERSEE, a Nulling Interferometer with Dynamic Correction of External Perturbations" Sophie Jacquinod, <i>IAS</i>	14:30	"Optical Communications between an Aircraft & a Geo Relay Satellite: Design & Flight Results of the LOLA Demonstrator" L. VAILLON, <i>EADS Astrium Satellites</i>
14:50	"Optical Characterization of Infrared Telluride Glass Fibers Space Use" A.J. FABER, <i>TNO Science and Industry</i>	14:50	"Photonic Beamforming Network for Multibeam Satellite-on-Board Phased-Array Antennas" M.A. PIQUENAS, <i>DAS Photonics</i>
15:10	"Demonstrating Improved Fibre Coupling Efficiency by Loss-Less Shaping of Top-Hat Receive Beams" Christoph VOLAND, <i>Oerlikon Space AG</i>	15:10	"Optical Wireless Intra-Spacecraft Communications" Héctor GUERRERO, <i>INTA</i>
<b>15:30 COFFEE BREAK</b>			
<b>Session 10 : X-Ray</b>		<b>Session 14 : Fiber Optic Sensors</b>	
15:50	INVITED : "Simbol-X: a Distributed Hard X Ray Optics" Gianpiero TAGLIAFERRI, <i>INAF Italia</i>	15:50	"Fiber-Optic Sensor Demonstrator (FSD) Integration with PROBA-2" Roman V. KRUZELECKY, <i>MPB Communication Inc</i>
16:20	"Caliste 64, first Prototype of Elementary Camera for the High Energy Detector of Simbol-X Mission" A. PENQUER, <i>CNES</i>	16:10	"Fiber Optic Sensing for Telecommunication Satellites" Thomas ZEH, <i>Kayser-Threde GmbH</i>
		16:30	"Fibre Optic Sensor Interrogation System for the Ariane Launcher Based on an Electro-Optically Tuneable Laser Diode" Markus PLATTNER
		16:50	"Multi-Parameter Fibre Bragg Grating Sensor-Array for Thermal Vacuum Cycling Test" Lun CHENG, <i>TNO Science and Industry</i>
<b>16:40 - 18:30 POSTER SESSION</b>			

<b>THURSDAY, OCTOBER 16TH</b>			
<b>Session 15 : Lidars</b>		<b>Session 20 : Spectrometers</b>	
08:50	INVITED : "Lidar Technology Developments in Support of ESA Earth Observation Missions" Yannig DURAND, <i>European Space Agency</i>	08:50	INVITED : "Sentinel 4 the Geostationary Component of the GMES Atmosphere Monitoring Missions" G. BAZALGETTE COURREGES LACOSTE, <i>ESTEC</i>

09:20	"Design and Development of the Backscatter Lidar Atlid for Eathcare" Lenaic LE HORS, <i>EADS Astrium</i>	09:20	"From Ozone Monitoring Instrument (OMI) to Tropospheric Ozone Monitoring Instrument (TROPOMI)" Marcel DOBBER, <i>Royal Netherlands Meteorological Institute</i>
09:40	"The On-Orbit Performance of the CALIOP Lidar on CALIPSO" William HUNT, <i>NASA Langley Research Center</i>	09:40	"Guided-Wave High-Performance Spectrometers for the MEOS Miniature Earth Observation Satellite" Roman V. KRUCZELECKY, <i>MPB Communication Inc</i>
10:00	"Development & Evaluation of a High Sensitivity Dial System for Profiling Atmospheric CO2" S. ISMAIL, <i>NASA Langley Research Center</i>	10:00	"Greenhouse Gases Observation from Space -Overview of Tanso and Gosat" Takashi HAMAZAKI, <i>JAXA</i>
10:20	"The Development of CO2 Dial for the Calibration & Validation of Gosat Data" Masakatsu NAKAJIMA, <i>JAXA</i>	10:20	"IASI Instrument Onboard METOP-A: Lessons Learned after almost two years in Orbit" Laurence BUFFET, <i>CNES</i>
<b>10:40 COFFEE BREAK</b>			
<b>Session 16 : Lidars and Lasers</b>		<b>Session 21 : Spectrometers</b>	
11:00	"Investigation of Laser Induced Deposit Formation Under Space Conditions" H. SCHROEDER, <i>German Aerospace Center</i>	11:00	"Instrument Concept & Preliminary Performances of SIFT: Static Infrared Fourier Transform Interferometer" P. HEBERT, <i>CNES</i>
11:20	"Chemcam on MSL2009: First Laser Induced Breakdown Spectrometer for Space Science" Muriel SACCOCCIO, <i>CNES</i>	11:20	"Optical Analysis and Performance Verification on Aladin Spectrometers" L. FRANCOU, <i>Oerlikon Space</i>
11:40	"Conduction Cooled Compact Laser for Chemcam Instrument" B. FAURE, <i>CNES</i>	11:40	"COMPAQS - A Compact Concentric UV/Visible Spectrometer, Providing a New Tool for Air Quality Monitoring from Space" D. LOBB, <i>University of Leicester</i> & Dan LOBB, <i>SSTL</i>
12:00	"Frequency-Stable Seed Laser for the Aeolus Mission" Hanno SCHEIFE, <i>Tesat-Spacecom GmbH &amp; Co.KG</i>	12:00	"ALISEO on MIOSAT : an Imaging Interferometer for Earth Observation" D. GUZZI, <i>CNR-IFAC</i>
<b>12:20 LUNCH</b>			
<b>Session 17 : Lasers</b>		<b>Session 22 : Spectrometers</b>	
14:00	INVITED : High-Energy, 2µm Laser Transmitter for Coherent Wind Lidar" Upendra N SINGH, <i>NASA Langley Research Center</i>	14:00	"Imaging Spectrometers Developments in Italian Space Agency" V. DE COSMO, <i>ASI</i>
14:30	"Highly-Efficient, Frequency-Tripled ND: Yag Laser for Spaceborne Lidars" R. TREICHEL, <i>EADS Astrium GmbH</i>	14:20	"Performance Analysis for Hyper Spectral Signal Detection of Compact Imaging Spectrometers for STSAT3 Satellite" K.I. KANG, <i>Satellite Tech Research Center, KAIST</i>
14:50	"Quantum Cascade Lasers as Metrological Tools for Space Optics" S. BARTALINI, <i>INOA</i>	14:40	"Development of TMA-based Imaging System for Hyperspectral Application" Young-Wan CHOI, <i>Satrec Initiative</i>
15:10	"Single Frequency Free-Running Low Noise Compact Extended-Cavity Semiconductor Laser at High Power Level" A GARNACHE, <i>CNRS</i>	15:00	"Programmable Spectrometer using MOEMS Devices for Space Applications" Christophe BUISSET, <i>Thales Alenia Space</i>
<b>15:20 COFFEE BREAK</b>			
<b>Session 18 : Instruments and Metrology</b>		<b>Session 23 : Spectrometers</b>	

15:50	INVITED : "Challenges in the Optical System of GAIA" Rudolf S. LE POOLE, <i>Leiden Observatory</i>	15:50	"Micromega: a New Infrared Hyperspectral Imaging Microscope for in Situ Analysis" Vaitua LEROI, <i>Institut d'Astrophysique Spatiale</i>
16:20	"A Novel Optical Design for the Stereo Channel of the Imaging System Simbiosys for the Bepi Colombo ESA Mission" Vania DA DEPPO, <i>CNR-INFM Luxor</i>	16:10	"JWST-MIRI Spectrometer Main Optics Design and Mait Results" Ramon NAVARRO, <i>NOVA-ASTRON</i>
16:40	"Absolute Distance Measurements Using Two Mode Laser Telemetry" Michel LINTZ, <i>CNRS</i>	16:30	"A Variable-Tune Spatial Heterodyne Spectrometer for Broadband Spectral Line Studies in the Visible and Near-UV" Walter M. HARRIS, <i>University of California-Davis</i>
17:00	"Laser Metrology for a Next Generation Gravimetric Mission" Stefano CESARE, <i>Thales Alenia Space Italia</i>	16:50	"An Integral Field Spectrograph for SNAP" Eric PIETRO, <i>CNRS/INSU/LAM</i>
<b>17:10 BREAK</b>			
<b>Session 19 : Optical Components</b>		<b>Session 24 : Spectrometers</b>	
17:30	"High Stability Hollow Cube Corner" JJ FERME, <i>SESO</i>	17:30	"Probing of Hermean Exosphere by Ultraviolet Spectroscopy: Preliminary Calibration Results of an Ultraviolet Spectrometer" Nicolas ROUANET, <i>CNRS Service d'Aéronomie</i>
17:50	"Coupled Thermo-Elastic & Optical Performance Analyses of a Reflective Baffle for the Bepi Colombo Laser Altimeter (Bela) Receiver" E. RUGI GROND, <i>Oerlikon Space AG</i>	17:50	"The Spectropolarimeter for Planetary Exploration - SPEX" Erik LAAN, <i>TNO Science &amp; Industry</i>
18:10	"Innovative Lightweight Substrate for Stable Optical Benches & Mirrors" Elisabetta RUGI GROND & Andreas HERREN, <i>Oerlikon Space AG</i>	18:10	"Combined Raman Libs Spectrometer Elegant Breadboard - Built & Tested - And Flight Model Spectrometer" B. AHLERS, <i>TNO Science &amp; Industry</i>
19:30	GALA DINNER		

<b>FRIDAY, OCTOBER 17TH</b>			
<b>Session 25 : Cold Atoms</b>		<b>Session 28 : Detectors &amp; Electronics</b>	
08:40	INVITED : "Microwave and Optical Cold Atom Clocks for Space Applications" Pierre LEMONDE, <i>LNE-SYRTE</i>	08:30	INVITED : "Status of AlGaN based Focal Plane Array for near UV Imaging & Strategy to extend this Technology to Far-UV by Substrate Removal" Jean-Luc REVERCHON, <i>Thales Research and Technology</i>
09:10	"Reaching a few $10^{-13} \tau^{-1/2}$ Stability Level with a Compact Cold Atom Clock" David HOLLEVILLE, <i>SYRTE</i>	09:00	"Development of an EMCCD for Lidar Applications" Bertrand de Monte, <i>E2V</i>
09:30	"Compact & Robust Single-Frequency Diode-Pumped Vecsel at the Cesium D <sub>2</sub> Line for Atomic Clocks" Gaëlle LUCAS-LECLIN, <i>CNRS, Laboratoire Charles Fabry</i>	09:20	"Evaluation of an Innovative Color Sensor for Space Application" Virginie CESSA, <i>Micro-Cameras &amp; Space Exploration</i>
09:50	INVITED : "Testing the Universality of Free Fall in Freely-Falling Two-Species Atom Interferometer :	09:40	"Ionizing Doses and Displacement Damage Testing of COTS CMOS Imagers" Michel BREART DE BOISANGER, <i>EADS Astrium</i>

	The I.C.E. Project" A. LANDRAGIN, <i>SYRTE</i>	10:00	"Enhanced Broadband (11-15 $\mu$ M) QWIP FPAs for Space Applications" Frédéric BERNARD, <i>CNES</i>
10:20	"Compact & Robust Laser System for Atomic Interferometry in Space" A. BRESSON, <i>ONERA</i>	10:20	"Enhanced Infrared Broadband (11-15 $\mu$ M) QWIP FPAs for Space Applications" Alexandru NEDELUCU, <i>Alcatel-Thales</i>
<b>10:40 COFFEE BREAK</b>			
<b>Session 26 : Manufacturing and Control</b>		<b>Session 29 : Detectors &amp; Electronics</b>	
11:00	"Polishing, Coating & Integration of SiC Mirrors for Space Telescopes" J. RODOLFO, <i>SAGEM Défense Sécurité</i>	11:00	"Use of COTS Uncooled Microbolometer for the Observation of the Solar Eruptions in far Infrared" Bertrand LE RUYET, <i>LESIA</i>
11:20	"Manufacturing and Control of the Aspherical Mirrors for the Telescope of the Satellite Pleiades" Hélène DUCOLLET, <i>SESO</i>	11:20	"Radiometric Packaging of Uncooled Bolometric Infrared Focal Plane Arrays" François CHATEAUNEUF, <i>INO</i>
11:40	"Thermal / Vacuum Measurements of the Herschel Space Telescope by Close-Range Photogrammetry" Matteo APPOLLONI, <i>ESA</i>	11:40	"From SED HI Concept to Pleiades FM Detection Unit Measurements" M. OUDINOT, <i>Thales Alenia Space</i>
12:00	"Characterization & Cleaning Control of Optical Coatings by Using Goniometric Light Scatter Instrument with Sample Imaging Ability" Myriam ZERRAD, <i>Institut FRESNEL</i>	12:00	"Design of a Highly Integrated Video Acquisition Module for Smart Video Flight Unit Development" Vincent LEBRE, <i>Thales Alenia Space</i>
<b>12:20 LUNCH</b>			
<b>Session 27 : Optical Filters</b>		<b>Session 30 : Space Science Imagers</b>	
14:00	"Technological Development of Spectral Filters for Sentinel-2" Karin SCHROTER, <i>Jena-Optronik GmbH</i>	14:00	"Development of the Science Instrument CLUPI: the Close-UP Imager on Board the Exomars Rover" Virginie CESSA, <i>Micro-Cameras &amp; Space Exploration</i>
14:20	"Narrow-Band Filters for Ocean Colour Imager" Hélène KROL, <i>CILAS</i>	14:20	"Instrument Design and On-Orbit Performance of the Solar Optical Telescope aboard Hinode (SOLAR-B)" Yoshinori SUEMATSU, <i>National Astronomical Observatory of Japan</i>
14:40	"Mechanical Design & Qualification of IR Filter Mounts & Filter Wheel of INSAT-3D Sounder for low Temperature" A.P. VORA, <i>Indian Space Research Organization</i>	14:40	"Thermal Infrared Spectrometer MERTIS for the Bepi Colombo Mission to Mercury" Dr Thomas ZEH, <i>Kayser-Threde GmbH</i>
15:00 Plenary - Conclusion/Wrap up			
16:00 End			