2nd European Workshop on Artificial Nighttime Light Remote Sensing

12–15 October 2026 | ESA–ESRIN | Frascati (Rome), Italy

esa EUROPEAN SPACE AGENCY

Monday, 12 October 2026 – Big Hall (ESA-ESRIN)

12:30	***Refreshments & Registration***	
13:15 – 13:25	Welcome and Logistics	Ferran Gascon (ESA)
13:25 – 13:45	EO at ESA	Rune Floberghagen (ESA)
13:45 – 14:00	Workshop Objectives	Matthias Drusch (ESA)
Session 1: Existing Spaceborne Capabilities		
Chairs: Hilke Oetjen & Chris Kyba		
14:00 – 14:30	NASA's Black Marble and the Future of Earth-at-Night Observation	Miguel Román (NASA)
14:30 – 15:00	ESA and Copernicus night-vision-capabilities	Ferran Gascon (ESA) & Simon Proud (ESA)
15:00 – 15:30	Mapping Urban Nighttime Lights using EnMAP: Las Vegas and Riyadh	Tobias Storch (DLR)
15:30 – 16:00	*Coffee*	
16:00 – 16:30	From Pictures to Measurements: Unlocking Astronaut Photography as a Scientific Nighttime Earth Observation Record	Alejandro Sanchez de Miguel (IAA-CSIC)
16:30 – 17:00	S250-Optical a versatile system with high resolution nighttime acquisition capability	Renaud Fraisse (Airbus Defense and Space)
17:00 – 17:30	ESA EO Architecture	Vanessa Keuck (ESA)
17:30 – 18:15	Discussion	
18:30 – 20:00	*Icebreaker including finger food*	
20:00 – END OF DAY 1		

Tuesday, 13 October 2026 – Big Hall (ESA-ESRIN)

9:00	***Welcome Coffee & Registration***	
Session 2: Applications – Environmental Impact		
Chairs: Monika Kuffer & Cristian Rossi		
9:30 – 10:00	Illuminating environmental risks: remote sensing of ALAN impacts	Franz Hoelker (Leibnitz Institute of Freshwater

		Ecology and Inland Fisheries)
10:00 – 10:20	Night-time satellite data for environmental assessment	Brian Espey (Trinity College Dublin, University of Dublin)
10:20 – 10:40	Impact of skyglow on ecosystems and the need for a multi-angle dim-light satellite sensor	Andreas Jechow (Brandenburg University of Applied Science)
10:40 – 11:00	Analyzing the spatial distribution of light within Germany	Julia Becker (Ruhr University Bochum)
11:00 – 11:30	*Coffee*	
11:30 – 12:00	Nightlight from space: mapping artificial light at night for ecological impact assessments	Janine Bolliger (WSL)
12:00 – 12:20	GUIDED BY THE MOON, MISLED BY THE LIGHT: ASSESSING NIGHT-TIME LIGHT POLLUTION AND ITS IMPACT ON MARINE SEA TURTLES ALONG THE INDIAN COASTLINE	Rohita Neelam (IIRS-ISRO-ITC)
12:20 – 12:30	Early-life behavioural response of freshwater turtles to environmental nocturnal cues and risks	Martina Cecchetto (IGB)
12:30 -12:50	Identification of light pollution hotspots over French overseas territories	Emma Bousquet Borrut (CEREMA)
12:50 – 13:30	Discussion Session I	
13:30 - 14:30	*Lunch*	
Session 3: Applications – Economic Impact and Crisis Management		
Chairs: Steffen Dransfeld & Franz Hoelker		
14:30 – 15:00	Measuring Economic Growth with Satellite Data	Jiaxiong Yao (IMF)
15:00 – 15:20	Choosing, accessing, and trusting nighttime lights: A user requirements perspective from applied economics	Benjamin Koch (Ruhr Universitaet Bochum)

15:20 – 15:40	Urban Nightscapes seen from Above: Leveraging Airborne Technologies for Sustainable Lighting and Energy Optimization	Deepak Madhusudhanarao (Digisky s.r.l.)
15:40 – 16:00	A Decade of Nighttime Lights Research: From Statistical Frameworks to Machine Learning	Ola Hall (Lund University)
16:00 – 16:20	*Coffee*	
16:20 – 16:50	Humanitarian crisis detection with nighttime lights	Corinne Bara (ETH Zuerich)
16:50 – 17:10	Assessing urban resilience to shocks through airport productivity proxies derived from fine-resolution satellite nighttime lights	Nicolas Tziokas (Luxembourg Instutute of Science and Technology)
17:10 – 17:30	Integrated Monitoring Approaches for Artificial Light at Night Compliance Assessment	Dipendra Bhattarai (Worley)
17:30 – 18:00	Discussion II	
18:00 – END OF DAY 2		

Wednesday, 14 October 2026 – Big Hall (ESA-ESRIN)

9:00	***Welcome Coffee & Registration***	
Session 4 Applications – Global Human Settlement Monitoring		
Chairs: Vanessa Keuck & Ferran Gascon		
9:30 – 10:00	Urban Nights from Space: Revealing Inequality, Light Pollution, and Crisis	Monika Kueffer (Twente)
10:00 – 10:20	Electricity Access in African Informal Settlements: From Global Data Uncertainties to Intra-Urban Disparities with GHSL and Nighttime Lights	Angela Abascal (Public University of Navarra)
10:20 – 10:40	The role of nighttime light data in the context of global human settlement monitoring	Michele Melchiorri (JRC)

10:40 – 11:00	Assessing human settlements in areas without reported nighttime illumination	Johannes Uhl (JRC)
11:00 – 11:20	FORM, FUNCTION AND ILLUMINATION: SPATIAL PATTERN ANALYSIS OF NIGHT TIME LIGHT AND URBAN MORPHOLOGY IN NATIONAL CAPITAL TERRITORY(NCT) OF DELHI, INDIA USING SDGSAT-1 NIGHT LIGHT SATELLITE	Rohita Neelam (IIRS-ISRO-ITC
11:20 – 11:40	*Coffee*	
Session 5 Processing I		
Chairs: Simon Proud & Andreas Jechow		
11:40 – 12:10	Processing Components for Artificial Nighttime Light Remote Sensing	Tobias Eckert (DLR)
12:10 – 12:30	Sentinel-2 nighttime imagery: Applications, limits and future potential	Merlijn Dingemanse (DLR)
12:30 – 12:50	Evaluation of Gaps in VIIRS VNF Flaring Data Using Sentinel-2 and Landsat Nighttime Observations	Lulu Si (university of Valencia)
12:50 – 13:10	A Dedicated Processing Approach for Sentinel-2 Nighttime Acquisitions	Emmanuel Hillairet (CS-Group)
13:10 – 13:30	Discussion III	
13:30 – 14:30	*Lunch*	
Session 5 Processing II		
Chairs: Simon Proud & Andreas Jechow		
14:30 – 14:50	Automated Georeferencing of ISS Nighttime Imagery Using Image Simulation and Computer Vision	Raul Perez-Parras (IAA-CSIC)
14:50 – 15:10	Atmospheric correction of nighttime high-resolution	Louis Rivoire (ACRI-ST)

	acquisitions and its validation	
15:10 – 15:30	Unlocking the potential of high-resolution nighttime light data for large-scale applications using the MAXIFICO image compositing method	Johannes Uhl (JRC)
15:30 – 15:50	Spatio-Temporal Graph Neural Networks for Multi-Source Disaggregation and Environmental Impact Assessment of Artificial Nighttime Light Remote Sensing	Maamar Arbouz (EdgeOrbit AI)
15:50 – 16:20	*Coffee*	
16:20 – 16:40	From Satellite Nighttime Lights to Night-Sky Brightness: Integrating VIIRS and Ground Observations in Europe	Siyue Zheng (University Ghent)
16:40 – 17:00	Blue-light fraction of outdoor lighting from drones and balloons: a two-camera ratio method and its first field test	Federico Toson (CISAS "G. Colombo", University of Padova)
17:00 – 17:20	Making Nighttime Observations Comparable: A Metrological Basis for Future Missions	Valery Ann Jacobs (KU Leuven)
17:20 – 17:40	CEOS Analysis Ready Data (CEOS-ARD) specification for Nighttime Lights Surface Radiance	Zhuosen Wang (University of Maryland)
17:40 – 18:00	Discussion IV	
18:00 – END OF DAY 3		

Thursday, 15 October 2026 – Big Hall (ESA-ESRIN)

9:00	***Welcome Coffee & Registration***
Session 6 Future Mission Ideas and Processing Developments	
Chairs: Matthias Drusch & Tobias Storch	

9:30 – 10:00	The science case and requirements for a Future EO night mission.	Christopher Kyba (Ruhr University Bonn)
10:00 – 10:20	Features of a proposed future satellite mission for coastal and inland aquatic ecosystems (GALENE), including night measurements	Tiit Kutser (University of Tartu)
10:20 – 10:40	Developing Night-Time Light Remote Sensing Capabilities Using PocketQubes	Frazer Donoghue (Alba Orbital)
10:40 – 11:00	Stratospheric Sounding Balloons for Nighttime Light Remote Sensing	Salvo Maruccio (Maruccio TBC)
11:00 – 11:20	Demonstration of services for monitoring nighttime lighting and impacts of light pollution	Sarah Potin (La Telescop) and Marie-Odile Marché (CNES)
11:20 – 11:30	*Coffee*	
11:30 – 13:30	White paper organisation and recommendations to ESA	
13:30 – 14:30	*Lunch*	
14:30 – END OF THE 2nd EUROPEAN WORKSHOP ON ARTIFICIAL NIGHTTIME LIGHT REMOTE SENSING		

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