

# Cosmic Cartography with Roman:

## Advances in Galaxy Structures, Distributions, Dark Matter, and Dark Energy

July 14 – 18, 2025 at Space Telescope Science Institute - Schedule of Events

### Monday, July 14, 2025

Time	Title	Speaker	Location
8:30am	Continental Breakfast	(Speaker Tech Check for Session 1 in Auditorium)	Café
9:30am	STScI Welcome	Jen Lotz	Auditorium
9:45am	Roman Welcome	Dominic Benford	Auditorium
<b>Session 1: Laying the Groundwork: Simulations &amp; Mock Universes, Chair: Patricia Larsen</b>			
10:00am	Cosmological Simulations and the Galaxy--Halo Connection in the Roman Era	Andrew Hearin (I)	Auditorium
10:25am	Mock galaxy catalogs for the Roman Galaxy Redshift Survey	Andrew Robertson (C)	Auditorium
10:40am	LtU: Simulation-Based Inference & the Role of Accelerated Mocks in Cosmological Inference	Matthew Ho (C)	Auditorium
10:55am	TBD		Auditorium
11:10am	Morning Coffee Break + Posters	(Speaker Tech Check for Session 2 in Auditorium)	Café
<b>Session 2: Distance Ladder &amp; SNe Ia Cosmology, Chair: Ori Fox</b>			
11:40am	Supernova Cosmology Overview with NASA's Roman Space Telescope	Dillon Brout (I) (Virtual)	Auditorium
12:05pm	An Early-type supernovae type-Ia host-galaxy-based local Cosmological Distance Ladder with Tip of the Red Giant Branch	Max Newman (C)	Auditorium
12:20pm	Validating Injected SNe Ia in the Roman OpenUniverse Time-Domain Survey Simulations	Lauren Aldoroty (C)	Auditorium
12:35pm	Constraining cosmology with peculiar velocities	Chaimongkol Duangchan (C)	Auditorium
12:50pm	Poster Pops (Haley Bowden, Julie Xue, Yanhui Yang, Aryana Haghjoo, Akum Gill, Nihar Dalal, Finian Ashmead)		Auditorium
1:05pm	Lunch	(Speaker Tech Check for Session 3 in Auditorium)	Café
<b>Session 3: <math>\Lambda</math>CDM and Beyond: Theory &amp; Multi-Probe Inference, Chair: Javier Sanchez</b>			
2:05pm	Challenges and opportunities for testing cosmology in the Roman era	Agnès Ferté (I)	Auditorium
2:30pm	3Dx2D: Combining spectroscopic and imaging measurements with Roman	Yu-Hsiu Huang (C)	Auditorium
2:45pm	Cosmic Cartography for Cosmological Gain: Towards Multi-Probe Field-Level Inference	Eduardo Rozo (C)	Auditorium
3:00pm	Cosmology from Non-Linear Redshift-Space Clustering and Gravitational Lensing	Johannes Lange (C)	Auditorium
3:15pm	Cosmological constraints from joint analyses of clusters, galaxies, and weak lensing	Chun-Hao To (C) (Virtual)	Auditorium
3:30pm	Afternoon Coffee Break + Posters	(Speaker Tech Check for Session 4 in Auditorium)	Café
<b>Session 4: Galaxy Clusters: Formation to Cosmology, Chair: Yuanyuan Zhang</b>			
4:00pm	Precision Cosmology with Optical Clusters - projects and prospects with ongoing and future surveys	Tomomi Sunayama (I)	Auditorium
4:25pm	Cosmology with weak-lensing-selected galaxy clusters in Roman: Demonstration with Subaru HSC	Kai-Feng Chen (C)	Auditorium
4:40pm	Simulation-Based Forward-Modeling of Optical Clusters	Andres Salcedo (C)	Auditorium
4:55pm	Utilizing Roman to Study the Onset of Galaxy Clusters with Gravitational Lensing	Kyle Finner (C) (Virtual)	Auditorium
5:10pm	Poster Pops (Gourab Nandi, Ray Lucas, Erik Peterson, Jonathan Blazek, Jeffrey Newman, Aaron Romanowsky, Seppo Laine, Shenming Fu, Katya Leidig, Katherine Laliotis, Shurui Lin, Keith Buckholz, Yash Ejjagiri, Rosie Bartlett, Grant Merz)		Auditorium
5:30pm	Welcome Reception	All Invited	Café

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Tuesday, July 15, 2025

Time	Title	Speaker	Location
8:30am	Continental Breakfast	(Speaker Tech Check for Session 5 & 6 in Auditorium)	Café
<b>Session 5: Roman &amp; Euclid: Status, Synergies &amp; Operational Strategies, Chair: Ori Fox</b>			
9:30am	Roman Mission Status	Julie McEnery	Auditorium
9:45am	Science Operations of the Euclid Cosmology Mission	Xavier Dupac (C)	Auditorium
<b>Session 6: CMB Lensing &amp; Cross-Correlations with Galaxy Surveys, Chair: Patricia Larsen</b>			
10:00am	Cosmology and cross-correlations with ACT and SO	Jo Dunkley (I)	Auditorium
10:15am	Insights from HSC-Y3 Cosmic Shear and Prospects for HSC Final Year Analysis and Stage IV Surveys	Ryo Terasawa (C)	Auditorium
10:40am	A Window into Gravity: Cosmic Voids × CMB Lensing	Mar Pérez-Sar (C) (Virtual)	Auditorium
10:55am	Euclid Mission: Computing the Survey	Ismael Tereno (C) (Virtual)	Auditorium
11:10am	Morning Coffee Break + Posters	(Speaker Tech Check for Session 7 in Auditorium)	Café
<b>Session 7: From Cosmic Dawn to AGN: Slitless Spectroscopy &amp; Time-Domain Views of Galaxy Evolution, Chair: Yun Wang</b>			
11:40am	Unveiling galaxy evolution with Roman's WFI: Insights from JWST slitless spectroscopy programs	Kalina Nedkova (C)	Auditorium
11:55am	Cartography at Cosmic Dawn	Sangeeta Malhotra (C)	Auditorium
12:10pm	Cosmic Cartography at the Cosmic Extremes: Mapping the 100 Mpc-scale Cosmic Himalayas at Cosmic Noon	Yongming Liang (C)	Auditorium
12:25pm	Probing Galaxy Evolution within Galaxy Overdensities Using the CANDELS-Herschel Environmental Spectroscopic Survey	Jitrapon Lertprasertpong (C)	Auditorium
12:40pm	Mapping the Structures of Dust Tori of AGNs with Roman HLTDS	Hojin Cho (C)	Auditorium
12:55pm	Group Photo		STScI Entrance
1:00pm	Lunch	(Speaker Tech Check for Session 8 in Auditorium)	Café
<b>Session 8: Micro-arcsec Astrometry Frontiers: From Gravitational Waves to Proper Motions of Stars and Galaxies, Chair: Lado Samushia</b>			
2:00pm	Detecting microhertz gravitational waves from supermassive blackholes with Roman	Tzu-Ching Chang (I)	Auditorium
2:25pm	Enhanced Astrometry by Combining Telescopes	Kevin McKinnon (C)	Auditorium
2:40pm	J-ATLAS: Javalambre Andromeda and Triangulum Legacy Astrophysical Survey	Borja Anguiano (C)	Auditorium
2:55pm	Simulating Galaxy Proper Motions and Real Time Cosmology with the Roman Space Telescope	Jennie Paine (C)	Auditorium
3:10pm	Afternoon Coffee Break + Posters	(Speaker Tech Check for Session 9 in Auditorium)	Café
<b>Session 9: Mapping Mass with Gravitational Lensing: Strong, Weak &amp; Kinematic, Chair: Ami Choi</b>			
3:40pm	Mapping the Universe with weak lensing	Henk Hoekstra (I)	Auditorium
4:05pm	The Roman View of Strong Gravitational Lenses	Tansu Daylan (C)	Auditorium
4:20pm	Kinematic Lensing with Roman Space Telescope	Jiachuan Xu (C)	Auditorium
4:35pm	Dark Energy Survey Year-6 (DES Y6) Weak Lensing Pixel-to-Cosmology	Masaya Yamamoto (C)	Auditorium
4:50pm	Poster Pops (Rakshitha Thaman, Intae Jung, Farhan Hasan, Majidin Abdullah, Grecco Oyarzun, Sachi Weerasooriya, Isak Wold)		Auditorium
5:30pm	Self-Organized Group Dinners at local restaurants	All Invited	

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**Wednesday, July 16, 2025**

Time	Title	Speaker	Location
8:30am	Continental Breakfast + Posters	(Speaker Tech Check for Session 10 in Auditorium)	Café
<b>Session 10: Mini Workshops for All Participants</b>			
9:30am-11:05am	Roman Starter Kit: <ul style="list-style-type: none"> <li>Preparation for Cycle 1 Proposals (including an introduction to the proposal process, tools) and the Roman Research Nexus Science Platform</li> <li>Presentations from the Roman Project Infrastructure Teams (PITs) on community deliverables and status updates</li> </ul>	<ul style="list-style-type: none"> <li>Welcome – Kristy McQuinn</li> <li>Intro on community defined surveys – Tom Barclay</li> <li>Proposal Call and Proposal Tool – Patrick Lowrance</li> <li>SOC tools (includes APT, ETC, sim tools) – Charles Lajoie</li> <li>ETC web live demo – Eunkyun Han</li> </ul>	Auditorium
11:05am	Morning Coffee Break + Posters		Café
11:30am - 1:05pm	Workshop Continues <ul style="list-style-type: none"> <li>Data products and how to access them (includes Nexus)</li> <li>Nexus Live Demo (includes info on available simulated datasets)</li> <li>PIT Presentations</li> </ul>	Gisella De Rosa Tyler Desjardins Yun Wang, Erik Peterson, Sean Terry	Auditorium
1:05pm	Lunch	(Speaker Tech Check for Session 11 in Auditorium)	Café
<b>Session 11: Calibrating Cosmic Shear, Chair: Ami Choi</b>			
2:00pm	Breaking astrophysical barriers for next-generation cosmic shear: multi-wavelength constraints	Alex Amon (I)	Auditorium
2:25pm	Chromatic Effects on the PSF and Shear Measurement for the Roman High-Latitude Wide Area Survey	Federico Berlfein (C)	Auditorium
2:40pm	Measuring Intrinsic Alignments with the Physics of the Accelerating Universe Survey	David Navarro-Girones (C)	Auditorium
2:55pm	Where Spectroscopic and Imaging Surveys Connect: Demographic Modeling of Intrinsic Alignments	Jamie McCullough (C)	Auditorium
3:10pm	Multi-survey Simulations to Develop New Algorithms: Application to Shape-Measurement	Axel Guinot (C)	Auditorium
3:25pm	Afternoon Coffee Break + Posters	(Speaker Tech Check for Session 12 in Auditorium)	Café
<b>Session 12: Machine Learning for Cosmology, Chair: Yuanyuan Zhang</b>			
3:55pm	Trustworthy Machine Learning for Scientific Discovery with Roman Surveys	Michelle Ntampaka (I)	Auditorium
4:20pm	Deep Learning Photometric Redshifts for Roman	Ashod Khedertarian (C)	Auditorium
4:35pm	Data Augmentation, Efficient Marginalisation & Accelerated Computation for LSST Cosmology	Yunhao Zhang (C)	Auditorium
4:50pm	SDAS Happy Hour	All Invited	Café
7:00pm	Deep Space Dialogues: The Nancy Grace Roman Space Telescope: Years in the Making - Steps from Discovery	All Invited	Virtual

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Thursday, July 17, 2025

Time	Title	Speaker	Location
8:30am	Continental Breakfast	(Speaker Tech Check for Session 13 in Auditorium)	Café
<b>Session 13: Mapping the Universe with Galaxy Clustering I, Chair: Yun Wang</b>			
9:30am	Exploring Cosmic Acceleration: the 3 years of the DESI data	Hee-Jong Seo (I)	Auditorium
9:55am	Emulating Systematics in Covariance Matrices for Roman GRS Clustering Statistics	Jaide Swanson (C)	Auditorium
10:10am	Status of the Roman Galaxy Redshift Survey Project Infrastructure Team Grism Simulations	Ashley Ross (C)	Auditorium
10:25am	Enabling Clustering-based Redshift Calibration for Roman Cosmology	Yoquelbin Salcedo (C)	Auditorium
10:40am	Morning Coffee Break + Posters.	(Speaker Tech Check for Session 14 in Auditorium)	Café
<b>Session 14: Mapping the Universe with Galaxy Clustering II, Chair: Lado Samushia</b>			
11:15am	Cosmology from Six years of Dark Energy Survey data	Martin Crocce (I)	Auditorium
11:40am	Clearing the Cosmic Fog: Circumgalactic Dust and Precision Distance Estimates with Roman	Jacqueline McCleary (C)	Auditorium
11:55am	Combining Rubin & Roman Photometry with the LSST Pipeline	Tae-hyeon Shin (C)	Auditorium
12:10pm	Constraints on cosmology and baryonic feedback DESxACT (lensing x tSZ)	Shivam Pandey (C) (Virtual)	
12:25pm	Lunch	(Speaker Tech Check for Session 15 in the Auditorium)	Café
<b>Session 15: Afternoon Panel</b>			
1:45pm	Afternoon panel discussion on recent survey results and implications for Roman	Martin Crocce, Rachel Mandelbaum, Ashley Ross, Eric Switzer	Auditorium
3:10pm	Afternoon Coffee Break + Posters	(Speaker Tech Check for Session 16 in Auditorium)	Café
<b>Session 16: Local Universe I: Stellar Streams, Chair: Karrie Gilbert</b>			
3:40pm	Unveiling Dark Matter with Dwarfs and Stellar Streams in the Era of Roman & Rubin	Peter Ferguson (I)	Auditorium
4:05pm	Current and Future Milky Way and Stellar Survey Programs of the Dark Energy Spectroscopic Instrument	Constance Rockosi (C)	Auditorium
4:20pm	Roman's Wide-field View of Stellar Streams	Robyn Sanderson (C)	Auditorium
4:35pm	Hunting for dark matter in the Milky Way with the Dark Energy Spectroscopic Instrument	Monica Valluri (C)	Auditorium
7:00pm	Astronomy on Tap at Guilford Hall: 1611 Guilford Ave, Baltimore, MD 21202	All Invited	Guilford Hall

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Friday, July 18, 2025

Time	Title	Speaker	Location
8:30am	Continental Breakfast	(Speaker Tech Check for Session 17 in Auditorium)	Café
<b>Session 17: Photometric Redshifts: Essential Tools for Next-Generation Data, Chair: Javier Sanchez</b>			
9:30am	Photometric redshifts for Rubin-era weak lensing	Justin Myles (C)	Auditorium
9:45am	Optimising Roman Photometric Redshifts for HLIS	Brett Andrews (C)	Auditorium
10:00am	RAIL: Open-Source Platform for Photometric Redshift Estimation and Research	Tianqing Zhang (C)	Auditorium
10:15am	Deep Spectroscopy with DESI for Photometric Redshift Training and Calibration	Biprateep Dey (C)	Auditorium
10:30am	Improving Sample Variance Modeling for Photometric Redshift Calibration in Stage-IV Cosmology Surveys	Niko Šarčević (C) & Boyan Yin (C)	Auditorium
10:45am	Dual AGN and the status of photo-z: synergies across Euclid, Roman and a new HSC medium band survey	Federica Tarsitano (C)	Auditorium
11:00am	Morning Coffee Break + Posters	(Speaker Tech Check for Session 18 in Auditorium)	Café
<b>Session 18: Local Universe II: Dwarf Galaxies, Chair: Karrie Gilbert</b>			
11:30am	Hunting the Faintest Galaxies: Detection Efficiency of Dwarfs in the Local Volume with Roman WFI	Deepthi Prabhu (C)	Auditorium
11:45am	Dwarf Galaxies Across Cosmic Distances with DESI	Viraj Manwadkar (C)	Auditorium
12:00pm	Tracking the Evolution of Dwarf Galaxies using Large Cosmic Surveys	Nushkia Chamba (C)	Auditorium
12:15pm	Illuminating the halo mass profiles of dwarf galaxies	Helena Treiber (C)	Auditorium
12:30pm	Conference Review & The Road Ahead for Roman Discussion		Auditorium