



NASA Hubble
Fellowship Program

Symposium

2024 Program

Public Live stream:

<https://www.youtube.com/@SaganSummerWorkshop>

All times Pacific Daylight Time

★ Remote/Virtual Presentation

Monday, September 16

- 9:00- 9:50 *Breakfast (Fellows and Presenters Only)*
- 10:00-10:30 *Welcome (Session Chair:)*
Chas Beichman
Nino Cucchiara
NHFP Leads
- 10:30-12:00 *Cosmology (Session Chair: VOLUNTEER NAME, Zoom Monitor: Thavisha Dharmawardena)*
- 10:30 Andrei Cuceu - Mapping the Cosmic Expansion History with DESI
 - 10:45 Hayley Macpherson - The low-redshift distance-redshift relation beyond FLRW
 - 11:00 Jessica Zebrowski - Probing the Middle Ages of Cosmic History with Line Intensity Mapping
 - 11:15 Justin Pierel - Type Ia Supernova Cosmology in the High-z Universe with JWST

- 11:30 Cristhian Garcia Quintero - Constraining Dark Energy and Modified Gravity with Galaxy Clustering and Weak Lensing
- 11:45 [Jennifer Lotz - Welcome from the STScI Director](#) 🌟
- 12:00-12:20 Break
- 12:20-13:05 [Rocky Worlds I \(Session Chair: Sarah Moran, Zoom Monitor: Thavisha Dharmawardena\)](#)
- 12:20 Maggie Thompson - Unlocking the Rocky Exoplanet Interior-Atmosphere Connection via Laboratory Experiments
- 12:35 Jaren Ashcraft - Understanding the Impact of Polarization Aberration on Direct Exoplanet Detection
- 12:50 Sebastian Zieba - Surface characterization of the rocky exoplanet LHS3844b with MIRI/LRS and NIRSpec/G395H on JWST) 🌟
- 13:05 Group Photo
- 13:15-14:15 Lunch
- 14:20-15:20 [Rocky Worlds II \(Session Chair: Rafael Luque, Zoom Monitor: Maggie Thompson\)](#)
- 14:20 Ward Howard - Unlocking the potential of optical sky surveys to constrain the radiation environment of every M dwarf with simultaneous UV and optical flare monitoring
- 14:35 Danica Adams - Photochemistry at Mars (and Exoplanets) Through Time
- 14:50 Michael Wong - Student-Led Projects at the Astrobiological Frontier: Recent Advances in Origins, Habitability, and Biosignatures
- 15:05 Ryan MacDonald - Atmospheres on Rocky Exoplanets: Promising Early Results from JWST Transmission Spectroscopy
- 15:20-15:40 Break

- 15:40-16:55 [CGM, Galaxy Formation, and Galactic Dynamics \(Session Chair: Rohan Naidu, Zoom Monitor: Maggie Thompson\)](#)
- 15:40 Cassi Lochhaas - Galactic Feedback Affects Predictions for Emission from the Circumgalactic Medium
- 15:55 Sanskriti Das - Multi-wavelength observation of the hot circumgalactic medium
- 16:10 Seiji Fujimoto - Primordial Rotating Disk Composed of ≥ 15 Dense Star-Forming Clumps at Cosmic Dawn
- 16:25 Adam Smercina - A Portrait of the Triangulum: Advancing a New Frontier of Galaxy Evolution with Resolved Stars
- 16:40 Ekta Patel - Revealing the Dynamics of Andromeda, Triangulum, and M32: Understanding Their Impact on Satellite Evolution and Structure

Tuesday, September 17

- 9:00-9:50 [Breakfast \(Fellows and Presenters Only\)](#)
- 10:00-11:30 [Fellows Only: Mentoring & DEI \(Session Chair: Thavisha Dharmawardena\)](#)
- 10:00 Victoria Molero González - The World(s) We Want & UC Santa Cruz
- 11:30-11:50 Break
- 11:50 [Mark Clampin, NASA Astrophysics Division Director](#) ★
- 12:00-13:15 [Large-Scale ICM and Early Universe \(Session Chair: Rohan Naidu, Zoom Monitor: Shangjia Zhang\)](#)
- 12:00 Nicholas Kern - Mapping the Universe with Hydrogen
- 12:15 Michael Calzadilla - Evolution of Supermassive Black Hole Feedback in Galaxy Clusters
- 12:30 Yue Hu - Magnetic Field in Galaxy Clusters: Insights from Synchrotron Intensity Gradient
- 12:45 Viraj Pandya - New Puzzles in Galaxy Formation: From the Cosmic Web to the Origin of the Hubble Sequence

13:00 Thales Gutcke - Population III stars, globular clusters and self-interacting dark matter - What dwarf galaxies can teach us about our Universe 🌟

13:15-14:15 Lunch

14:20-15:20 [Black holes & Accretion I \(Session Chair: Sylvia Biscoveanu, Zoom Monitor: Ekta Patel\)](#)

14:20 Jordy Davelaar - Tell-tale electromagnetic signatures of massive black hole binaries 🌟

14:35 Keefe Mitman - The Universe Never Forgets: pushing Einstein's theory to the limits with memory effects

14:50 Lia Medeiros - Reconstructing multi-frequency movies of supermassive black holes with PRIMO

15:05 Alexander Dittmann - Accretion onto Supermassive Black Hole Binaries

15:20-15:45 Break

15:45-17:00 [ISM: Dust, Magnetic Field, and Cosmic Ray \(Session Chair: Yue Hu, Zoom Monitor: Ekta Patel\)](#)

15:45 Thavisha Dharmawardena - Multi-scale multi-resolution 3D dust cartography of the Milky Way and its molecular clouds

16:00 Jed McKinney - Does dust evolve with redshift?

16:15 Raphael Skalidis - High precision magnetometry from dust polarization

16:30 Iryna Butsky - What in the Galaxy is Scattering Cosmic Rays?

16:45 Andrew Saydjari - The Highest Angular Resolution 3D Dust Map (and Why Bayesian Component Separation Methods are Crucial)

17:30-20:30 [Fellows and Panelists Only: Evening Symposium Banquet at Caltech, Pasadena](#)

Wednesday, September 18

9:00-9:50 [Breakfast \(Fellows and Panelists Only\)](#)

- 10:15-11:40 [Fellows Only Session: Career Panel on Faculty Applications \(Session Chair: Sylvia Biscoveanu\)](#)
10:15 Pradip Gatkine (UCLA); Masha Okounkova (PCC); Heather Knutson (Caltech); Gwen Rudie (Carnegie)
- 11:40 [Free Time all Afternoon](#)
[Fellows and Panelists Only: JPL Tour \(grab lunch, get on the bus, 30 min ride to JPL, tour starts at 1:00 pm\)](#)
- 13:00-15:30 JPL Tour

Thursday, September 19

- 9:00-9:50 [Breakfast \(Fellows and Panelists Only\)](#)
- 10:00-11:15 [Fellows Only Session: Grants and Benefits Q&A \(Session Chair: Andy Fruchter Zoom Monitor: Thavisha Dharmawardena\)](#)
10:00 STScI Grants group, Taye Sturgis (STScI)
- 11:15-11:35 Break
- 11:35-13:05 [Compact objects & Transients \(Session Chair: Keefe Mitman, Zoom Monitor: Jiayi Sun\)](#)
11:35 Tarraneh Eftekhari - A Repeating Fast Radio Burst Localized to a Massive Elliptical Galaxy
11:50 Wynn Jacobson-Galan - Final Moments: Pre-Supernova Emission and Flash Spectroscopy as Singular Probes of Late-Stage Red Supergiant Evolution
12:05 David Vartanyan - Core-Collapse Supernova: Bounce, Breakout, and Beyond
12:20 Vishal Baibhav - Which came first? Black-hole Spin or Supernova Kick
12:35 Sylvia Biscoveanu - Astrophysical insights from the compact-object mass distribution inferred with gravitational waves

- 12:50 Tim Cunningham (New Accreting White Dwarfs Determined from X-ray Observations)
- 13:05-14:15 Lunch
- 14:20-15:35 *[Planet Formation and Disks \(\(Session Chair: Maggie Thompson, Zoom Monitor: Sylvia Biscoveanu \)](#)*
- 14:20 Andres Izquierdo - Kinematic structures in planet-forming discs: results from exoALMA
- 14:35 Shangjia Zhang - Radiation-Hydrodynamics of Shadows on Transition Disks
- 14:50 Feng Long - JWST reveals a carbon-rich disk around a 40-Myr-old star
- 15:05 Charles Law - Sulfur Chemistry in Protoplanetary Disks as a Window into Planet Formation
- 15:20 Raluca Rufu - Origin of compact exoplanetary systems
- 15:35-15:55 Break
- 15:55-17:25 *[ISM: Star and Planet Formation \(Session Chair: Andrew Saydjari, Zoom Monitor: Sylvia Biscoveanu \)](#)*
- 15:55 Sultan Hassan - Pressure-Regulated, Feedback-Modulated Model of Star Formation: A Plausible Explanation for the Abundance of High Redshift Galaxies Observed by JWST 🌟
- 16:10 Joel Ong - Asteroseismology Reveals Core-Envelope Rotational Misalignment in Kepler-56
- 16:25 Peter Senchyna - Unraveling the most distant massive star populations with our next-door neighbors
- 16:40 Kartheik Iyer - Can we constrain the impact of feedback using galaxy star formation histories (SFHs)?
- 16:55 Jiayi Sun -Molecular Cloud Scale "Micro-physics" as Drivers of the Baryon Cycle and Galaxy Evolution
- 17:10 Rohan Naidu - All the Little Things: Seeking Signatures of Pop III Stars and the Protagonists of Reionization with JWST

20:30-22:00 *Fellows Only Session: Open Mic - Music, stories, poetry, art, outreach, dance, whatever! (Session Chair: VOLUNTEER NAME)*

Friday, September 20

9:00-9:50 *Breakfast (Fellows and Panelists Only)*

10:00-11:15 *Black holes & Accretion II (Session Chair: Joel Ong, Zoom Monitor: VOLUNTEER NAME)*

- 10:00 Amelia Hankla - Explaining the mm excess in RQ AGN with a multizone outflow 🌟
- 10:15 Riccardo Arcodia - Repeating X-ray flares as probes for galactic nuclei dynamics 🌟
- 10:30 Peter Kosec - Revealing the physics of accretion disk winds with Hercules X-1
- 10:45 Sara Issaoun - The First Polarized Image of Sagittarius A* 🌟
- 11:00 Matthew Liska - How common are warped accretion disks?

11:15-11:35 Break

11:50-13:05 *Exoplanet Atmospheres: Giant Planets and Sub-Neptunes (Session Chair: Ryan MacDonald, Zoom Monitor: Joel Ong)*

- 11:50 Adina Feinstein - Young Planets in the JWST Era 🌟
- 12:05 Zhoujian Zhang - Retrieving the Elemental Abundances of Self-Luminous Exoplanets and Their Host Stars 🌟
- 12:20 Sarah Moran - Neglected Polymorphs of Silicate Clouds in Substellar Atmospheres
- 12:35 Rafael Luque - Towards a holistic understanding of sub-Neptunes
- 12:50 Jessica Spake - The NUV transmission spectrum of LTT9779

13:05-14:15 Lunch