

AstroAI Workshop 2026

Time	Event	Location
Monday, June 15th, 2026		
9:00 – 9:30 am	Welcome & Coffee Opening Remarks – AstroAI Director Cecilia Garraffo	Phillips Auditorium
9:30 – 11:00 am	Keynote Speaker: Matthew Schwartz (Harvard University) Title: The Evolution of Science in the Age of AI	Phillips Auditorium
11:00 – 11:30 am	Break	Phillips Auditorium
11:30 am – 12:30 pm	Contributed Talks: Large Language Models <ul style="list-style-type: none">• Milan Pesta – <i>Anomaly Detection in ASAS-SN Using Visual Embeddings and Agent-Driven Active Learning</i>• Zesen Huang – <i>Democratizing Astrophysical Research with AI Agents: Lessons from Heliophysics</i>• Chayan Chatterjee – <i>From Speech to Spacetime: Repurposing Audio Foundation Models for Gravitational Wave Detection</i>	Phillips Auditorium
12:30 – 1:30 pm	Lunch	Lobby / Atrium
1:30 – 2:15 pm	Spotlight Speaker: Mike Smith (AstroAI/CfA) Title: The Platonic Universe: Do Foundation Models See the Same Sky?	Phillips Auditorium
2:15 – 3:30 pm	Tutorial: Rocco Di Tella (AstroAI/CfA) Title: Introduction to Agentic Coding for Researchers	Phillips Auditorium
3:30 – 4:00 pm	Break	Phillips Auditorium

Time	Event	Location
4:00 – 5:30 pm	<p>Poster Session</p> <ol style="list-style-type: none"> 1. Anshuman Acharya – <i>VIRTUAL - SCHARF: ML-based Super-Resolution for Bridging the galaxy-IGM connection at the Epoch of Reionization</i> 2. Atal Agrawal – <i>VIRTUAL - Beyond Pattern Matching: Bridging the Sim-to-Real Gap in Transient Flare Verification Using Vision Language Models</i> 3. Vaanya Ahuja – <i>Predicting exoplanet radius based on host star orbital parameters</i> 4. Aleksandr Belotserkovtsev – <i>Super-Resolving Euclid to Find Strong Gravitational Lenses</i> 5. Srinadh Reddy Bhavanam – <i>VIRTUAL - Fast GRB Localization from Raw Compton Events with Physics-Guided Implicit Neural Representations</i> 6. Yang Cheng – <i>A Multi-modal Learning Framework for JWST Imaging and Low-Resolution Spectra</i> 7. Emma Chickles – <i>Time encoding for irregularly sampled light curves</i> 8. Tirthankar De – <i>VIRTUAL - Modelling Hydrodynamics of Self Gravitating Molecular Clouds using Physics Informed Neural Networks</i> 9. Ruobing Dong – <i>Neural-network-based forward modeling of accretion disks</i> 10. Braden Draucek – <i>Towards an Understanding of AGN UV-NIR Spectra Using a Physically Motivated Spectral Decomposition Neural Network</i> 11. Kshitij Duraphe – <i>The Platonic Universe: Do Foundation Models See the Same Sky?</i> 12. Anmol Gandhi – <i>VIRTUAL - Pulsar Passage: Predicting Dynamical and Environmental Impacts on the Solar System</i> 13. Sara Gholamhoseinian – <i>Calibrated Selection Functions for Binary Black Holes via Normalizing Flows</i> 14. Akum Gill – <i>Stress Testing a Simulation-Based Inference Approach to Weak Lensing Galaxy Cluster Mass Inference</i> 15. Yash Gondhalekar – <i>VIRTUAL - Fast and Flexible Unsupervised Characterization of Astronomical Time Series with Multi-Time Attention</i> 16. Alberto Guirado – <i>VIRTUAL - AstroDetector: Comparing CNN and Random Forest Classifiers for Gravitational Lens Detection in Astronomical Imagery</i> 17. Paridhi Jain – <i>VIRTUAL - A General ML Framework for Diagnosing Physics Tensions in the Multi-Probe Era</i> 18. Nishu Karna – <i>A Foundation Model Approach to Solar Filament Detection</i> 19. Dakshesh Kololgi – <i>VIRTUAL - Learning the Cosmic Web: Inferring Cosmic Web Environments of Galaxies from Surveys</i> 20. Rhea Senthil Kumar – <i>PLANT: Conditional Generative Models for Fast Gravitational-Wave Population Synthesis</i> 21. Ariana Oprea – <i>VIRTUAL - Peaks as Probes: Simulation-Based Inference of Dark Matter Clustering from Weak-Lensing Convergence Maps</i> 22. Jiaming Pan – <i>Evaluating Diffusion Models for Cosmological Simulation Data: Memorization, Generalization, and Scientific Fidelity</i> 23. Manuel Perez Carrasco – <i>Plume Segmentation from MethaneSAT with Cross-Sensor Transfer Learning and Physics-Informed Postprocessing</i> 24. Biju Saha – <i>VIRTUAL - Identifying lopsidedness in spiral galaxies using Deep Convolutional Neural Network</i> 25. Rajit Shrivastava – <i>BRAHMA: Bar Recognition And Hatching using MACHine learning</i> 26. Nicolas Waehner – <i>Machine learning for exoplanet detection using the radial velocity method</i> 	Wolbach Conference Space
5:30 – 7:30 pm	Reception	Wolbach Conference Space

Time	Event	Location
Tuesday, June 16th, 2026		
9:00 – 9:30 am	Coffee	Phillips Auditorium
9:30 – 11:00 am	Keynote Speaker: Laurence Perreault-Levasseur (Université de Montréal) Title: Data-Driven High-Dimensional Inverse Problems: A Journey Through Strong Gravitational Lensing Data Analysis	Phillips Auditorium
11:00 – 11:30 am	Break	Phillips Auditorium
11:30 am – 12:30 pm	Contributed Talks: Inference/Classification 1 <ul style="list-style-type: none"> • Derick F. Tangap – <i>Cross-Scale Parameter Inference using Reinforcement Learning within a Centripetal Reference Framework</i> • Angelo Ricarte – <i>Observational Signatures of Flux Eruption Events in Black Hole Accretion Flows</i> • Ming-Shau Liu – <i>Continuous Representations of Baryonic Feedback for Robust Inference from Multiple Simulation Suites</i> 	Phillips Auditorium
12:30 – 1:30 pm	Lunch	Lobby / Atrium
1:30 – 2:15 pm	Spotlight Speaker: Kaley Brauer (Harvard University) Title: How Do We Know What an AI System Is Thinking?	Phillips Auditorium
2:15 – 3:30 pm	Contributed Talks: Inference/Classification 2 <ul style="list-style-type: none"> • Shunyuan Mao – <i>Self-Supervised Neural Networks for High-Resolution Radio Imaging</i> • Estuti Shukla – <i>Identifying Spacetimes using Neural Networks</i> • Alicia Martin – <i>Symbolically regressing dark matter halo profiles using weak lensing</i> • Kianoosh Tahani – <i>From Clouds to Stars: Determining Star Formation Efficiency via Stochastic Modeling and Machine Learning</i> 	Phillips Auditorium
3:30 – 4:00 pm	Break	Phillips Auditorium
4:00 – 5:30 pm	Tutorial: Phillip Cargile (AstroAI/CfA) Title: Accelerated Computation with Auto-Differentiation: AD/PyTorch/JAX	Phillips Auditorium

Time	Event	Location
Wednesday, June 17th, 2026		
9:00 – 9:30 am	Coffee	Phillips Auditorium
9:30 – 11:00 am	Keynote Speaker: Berthy Feng (IAIFI) Title: Imaging at the Edge of Science: Integrating Scientific Knowledge and AI to Recover Hidden Structure	Phillips Auditorium
11:00 – 11:30 am	Break	Phillips Auditorium
11:30 am – 12:30 pm	Ethics Discussion: Matthew Kopec (Harvard University) Title: Including AI Agents on Scientific Teams: Some Open Ethical Questions	Phillips Auditorium
12:30 – 1:30 pm	Lunch	Lobby / Atrium
1:30 – 2:15 pm	Spotlight Speaker: Ana Sofía Uzsoy (AstroAI/Harvard University) Title: Manifold learning for cosmic structures	Phillips Auditorium
2:15 – 3:30 pm	Contributed Talks: Generative Modeling <ul style="list-style-type: none"> • Leena Iwamoto – <i>Learning to Jet: A 3-D UNet Enabled Subgrid Model for AGN Jet Feedback in Cosmological Simulations</i> • Sacha Perry-Fagant – <i>Inference of Star Formation and Metallicity Histories from Galaxy Spectra with Score-Based Models</i> • Fatemeh Hafezianzadeh – <i>An AI super-resolution field emulator for cosmological hydrodynamics: the Lyman-α forest</i> 	Phillips Auditorium
3:30 – 4:00 pm	Break	Phillips Auditorium
4:00 – 5:30 pm	Tutorial: Konstantin Malanchev (CMU / LINCC Frameworks) Title: LSDB - A Tool for Scalable Analysis	Phillips Auditorium

Time	Event	Location
Thursday, June 18th, 2026		
9:00 – 9:30 am	Coffee	Phillips Auditorium
9:30 – 11:00 am	Keynote Speaker: Siddharth Mishra-Sharma (Boston University) Title: Measuring and forecasting AI scientific capabilities	Phillips Auditorium
11:00 – 11:30 am	Break	Phillips Auditorium
11:30 am – 12:30 pm	Contributed Talks: Source/Anomaly Detection 1 <ul style="list-style-type: none"> • Drew Oldag – <i>Hyrax – A low-code solution for rapid experimentation with machine learning and unsupervised discovery in astronomy</i> • Konstantin Malanchev – <i>Scalable multi-modal catalog analysis with LSDB framework and HATS catalog format</i> • Pablo Mercader Perez – <i>Disentangling Physics and Measurement Artifacts in Multi-Sensor Astrophysical Data</i> 	Phillips Auditorium
12:30 – 1:30 pm	Lunch	Lobby / Atrium
1:30 – 2:15 pm	Spotlight Speaker: Alex Gagliano (Physical Superintelligence) Title: Foundation Models for Science: Lessons from the Transient Sky	Phillips Auditorium
2:15 – 3:30 pm	Contributed Talks: Source/Anomaly Detection 2 <ul style="list-style-type: none"> • Hurum Maksora Tohfa – <i>AI Donut: First Real-Time Neural Network Control of Telescope Active Optics, Vera Rubin Observatory</i> • Steven Dillmann – <i>Terminal-Bench-Science: Evaluating AI Agents on Computational Workflows in the Natural Sciences</i> • Nico Bers – <i>Ingredients of Our Black Hole's Diet: Using Unsupervised Learning to Correlate Different Gas Phases in the Center of the Milky Way</i> • Adiba Amira Siddiqi – <i>Extracting Spectroscopic Information from Imaging and Photometry using Probabilistic Machine Learning</i> 	Phillips Auditorium
3:30 – 4:00 pm	Break	Phillips Auditorium
4:00 – 5:30 pm	Tutorial: Manuel Perez Carrasco (AstroAI/CfA) Title: Introduction to Transformers	Phillips Auditorium