

## Ishan Mishra

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**Research Interests:** Planetary Science, Spectroscopic Retrieval Methods, Astrobiology

### Career & Education

- PhD in Astronomy. *Cornell University* Expected August 2022
- M.S. in Astronomy. *Cornell University* February 2020
- B.Tech. in Electronics & Communications Engineering May 2016  
*Indian Institute of Technology, Guwahati, India*

### Honors and Awards

- Future Investigators in NASA Earth and Space Science and Technology (FINESST) 2020
- Research Travel Grant (suspended due to COVID-19), *Cornell University* 2020
- OPAG Meeting Early Career Travel Stipend, *USRA* 2022
- Carl Sagan Institute Travel Grant, *Cornell University* 2020, 2018
- Other Worlds Lab Summer Research Fellowship, *U.C. Santa Cruz* 2019
- Graduate Conference Grant, *Cornell University* 2018, 2021
- Summer Research Fellowship, *Academia Sinica Institute of Astronomy and Astrophysics, Taiwan* 2016
- KVPY fellowship (declined), *Indian Academy of Sciences* 2011

### Peer-Reviewed/Refereed Publications

- **Mishra, I.**, Lewis, N., Lunine, J., Hand, Kevin P., Helfenstein, P., Carlson, R.W., & MacDonald, R.J., *A comprehensive revisit of select Galileo/NIMS observations of Europa*, 2021, Planetary Science Journal 2, 183.
- **Mishra, I.**, Lewis, N., Lunine, J., Helfenstein, P., MacDonald, R.J., Filacchione, & G., Ciarniello, M., *Bayesian analysis of Juno/JIRAM's NIR observations of Europa*, 2021, Icarus 357, 114215.
- Lewis, N.K. + 21 co-authors including **Mishra, I.**, *Into the UV: The Atmosphere of the Hot Jupiter HAT-P-41b Revealed*, 2020, The Astrophysical Journal Letters, 902, L19.  
Performed a statistical analysis on a grid of forward models of the transmission spectra of HAT-P-41b's atmosphere.
- Bhattacharya, S., **Mishra, I.**, Vaidya, K., & Chen, W.P., *Disintegration of the Aged Open Cluster Berkeley 17*, 2017, The Astrophysical Journal, 847, 138  
Co-led the analysis of imaging data of the open cluster taken by Pan-STARRS survey that revealed its tidal tails.

### Conference Proceedings/Abstracts

- White, J., **Mishra, I.** and Lewis, N., *High Resolution JWST Transmission Spectra and Their Retrievals for GJ1214b*, 2021, American Astronomical Society Meeting Abstracts, 531.03
- Kutsop, N. + 12 co-authors including **Mishra, I.**, *Addressing Diversity, Inclusion, and Values in the Cornell Astronomy Community: The Graduate Students Response*, 2021, AAS/Division for Planetary Sciences Meeting Abstracts, 502.08
- **Mishra, I.**, Lewis, N. and Lunine, J., *Revisiting select Galileo/NIMS observations of Europa with Bayesian inference*, 2020, AAS/Division for Planetary Sciences Meeting Abstracts, 106.01
- Schwamb, Megan E. + 6 co-authors including **Mishra, I.**, *Assessing the Main-Belt Comet Population with Comet Hunters*, 2017, American Astronomical Society Meeting Abstracts, 112.04

## Approved Grants and Observing Proposals

- JWST Cycle 1, 13 hrs, GO 2358 (PI: MacDonald, R.J. + 14 Co-I's including **Mishra, I.**) 2021  
*Revealing the Atmospheric Composition of a White Dwarf Planet*
- Future Investigators in NASA Earth and Space Science and Technology (FINESST) 2020  
(FI: **Mishra, I.**; PI: Lewis, N.K.)  
*Providing new constraints on Europa's surface composition*

## Select Presentations

- *Providing new constraints on Europa's surface composition (talk)* 2022  
University of Arizona Origins Seminar Series (*invited*)  
UC Berkeley CIPS Seminar Series (*invited*)  
Yale Exoplanets and Stars Seminar Series (*invited*)
- *Assessing the feasibility of detection and characterization of organics on Europa (talk)* 2021  
American Geophysical Union Fall 2021 meeting
- *Revisiting select Galileo/NIMS observations of Europa with Bayesian inference (talk)* 2020  
AAS Division of Planetary Science meeting #52
- *Unlocking the secrets of HAT-P-41b's atmosphere (poster)* 2019  
ERES-V, Cornell University, USA
- *Detectability of Organics on Europa's Surface (poster)* 2018  
AGU Fall Meeting, Washington D.C., USA

## Outreach/Media

- *Co-leader of NYS-4H 2021 Challenge: Galactic Quest* 2021-2022  
Hands-on learning projects and workshops conducted virtually for school kids to get them interested in STEM
- *Author for [astrobites.org](https://astrobites.org)* 2020-Present  
Write brief paper summaries accessible to undergraduate level students
- *Volunteer for Museum in the Dark (Ithaca, NY)* 2017 - Present  
Co-organize an annual Halloween-themed outreach event at a local museum with astronomy and planetary science related demos.
- *Volunteer for Expanding Your Horizons (Cornell University)* 2018 - Present  
Helped run astronomy workshop activities for this yearly STEM outreach event for middle school girls.
- *Intern for citizen science project 'Comet Hunters'* 2016  
Academia Sinica Institute of Astronomy and Astrophysics, Taiwan

## Teaching/Mentoring experience

- *Graduate student mentor for Cornell Astronomy's REU program* Summers 2020 & 2021  
Mentored two undergraduate students in separate projects involving analysis of transmission spectra of super-Earths and reflectance spectra of rocky planetary surfaces respectively.
- *Astronomy Teaching Assistant (ASTRO 2202) (Cornell University)* Fall 2018  
Assisted in teaching students how to write popular science articles, graded written homework and gave feedback and held office hours.
- *Astronomy Teaching Assistant (ASTRO 1101/1102) (Cornell University)* Fall 2017-Spring 2018  
Taught recitation sections and lab sections that involved exercises on introductory astronomy topics. Assisted in writing and grading homework assignments and exams.

## Professional service and affiliations

- Graduate student member, *American Astronomical Society* 2020-
- Graduate student affiliate, *Europa Clipper Mapping and Imaging Spectrometer (MISE) team* 2020-
- *Co-organizer of Cornell Astronomy REU Program's Python workshop* 2020  
Conducted a multi-day workshop on introduction to scientific programming with python.
- *Co-organizer of Introduction to GitHub workshop at ERES-V* 2019  
Conducted a 3-hour workshop on open-source software development using GitHub.