

Ishan Mishra

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Research Interests	Planetary Science, Astrobiology, Spectral Retrieval Methods	
Education	PhD Astronomy	Expected Fall 2022
	Cornell University, Ithaca, New York, USA	
	MS Astronomy	Expected Spring 2020
	Cornell University, Ithaca, New York, USA	
	B.Tech. Electronics and Communications Engineering	Spring 2016
	Indian Institute of Technology, Guwahati India	
	Advisor: Gaurav Trivedi	
	Thesis: Gravitational n-body simulations using High Performance Computing	
Grants/ Academic Honors	Carl Sagan Institute Travel Grant, Cornell University	2018
	Graduate Student Travel Grant, Cornell University	2018
	Summer Research Fellowship, Academia Sinica Institute of Astronomy and Astrophysics, Taiwan	2016
	KVPY fellowship, Indian Academy of Sciences	2011
Publications	<i>Disintegration of the Aged Open Cluster Berkeley 17</i> , S. Bhattacharya, I. Mishra , K. Vaidya & W. P. Chen, 2017, The Astrophysical Journal, 847, 138	
Presentations	<i>Detectability of Organics on Europa's Surface</i> , poster , AGU Fall Meeting, Washington D.C., USA, December 2018	
	<i>Detectability of Organics on Europa's Surface</i> , poster , Europa Deep Dive 2, LPI, Houston, Texas, USA, October 2018	
	<i>Assessing the Main-Belt Comet Population with Comet Hunters.</i> , M. Schwamb +6 co-authors including I. Mishra , 2017, American Astronomical Society Meeting Abstracts #229, 112.04	
	<i>Tidal disruption of the aged open cluster Berkeley 17</i> , W. P. Chen +4 co-authors including I. Mishra , 2017, J. Phys.: Conf. Ser., 869, 012093	
Science Project Highlights	<i>Detectability of Organics on Europa's Surface</i>	Fall 2017-Present
	Guide: Prof. Jonathan Lunine	
	Investigating detection of bio-organics on the surface of Europa in light of the upcoming Europa Clipper mission that will carry the Mapping and Imaging Spectrometer for Europa or MISE.	
	<i>Spectroscopic Retrieval of Hot-Jupiter HAT-P 41b</i>	Fall 2018-Present
	Guide: Prof. Nikole Lewis	
	Performing spectroscopic retrieval on the Hubble Space Telescope UVIS-Grism data of the hot Jupiter HAT-P 41b, with the aim of detecting of hydrogen sulfide and other trace compounds in the atmosphere.	
	<i>Stellar Activity Indices from HARPS data</i>	Winter 2016
	Guides: Dr. Pedro Figueira and Dr. Nuno Santos	
	Created a Python tool to measure the chromospheric activity index $\log R'_{HK}$ for a given stellar spectrum from ESO's HARPS instrument.	

	<p><i>Testing the detection efficiency of Comet Hunters</i> Summer 2016 Guides: Dr. Meg Schwamb and Dr. Henry Hsieh Created a pipeline to generate simulated Main Belt Comet images with the goal of quantifying the detection performance of the citizen science website Comet Hunters.</p> <p><i>Hanle Echelle Spectrograph (HESP) pipeline</i> Winter 2015 Guides: Dr. Shyama Narendranath, and Dr. T. Sivarani Worked on noise calibration for the HESP instrument at the Indian Astronomical Observatory.</p> <p><i>Gravitational n-body simulations using HPC</i> Fall 2015-Spring 2016 Guide: Dr. Gaurav Trivedi Studied the parallelization of the n-body simulation problem using basic optimization of the brute force approach and the advanced Barnes Hut algorithm.</p> <p><i>Stellar Population of the Tidal Stream of the Open Cluster Berkeley 17</i> Summer 2015 Guide: Prof. W.P. Chen Analyzed the morphology of one of the oldest known open clusters in our galaxy, Berkeley 17 and found evidence for tidal tails.</p>
Outreach /Media	<p>Volunteer for Museum in the Dark, Ithaca, NY, 2017 - 2018 Co-organized an annual Halloween-themed outreach event at a local museum with astronomy and planetary science related demos.</p> <p>Invited talk on History of Human Space Exploration, Southworth Library, Dryden, NY, October 2018</p> <p>Invited talk on Asteroids, Kopernik Observatory, Dryden, Vestal, NY, June 2018</p> <p>Volunteer for Expanding Your Horizons, Cornell University, Spring 2018 - Present Helped run astronomy workshop activities for this yearly STEM outreach event for middle school girls.</p> <p>Secretary of the Astronomy Grads Network (AGN), Cornell University, Fall 2018 - Spring 2019 Organized a weekly Graduate Students and Post-docs Seminar. Liaison between the Astronomy Department's Outreach coordinator and the graduate students. Member of Cornell's Ask an Astronomer team that answers weekly questions from the general public.</p> <p>Intern for citizen science project Comet Hunters, ASIAA, Taiwan, Summer 2016</p>
Teaching	<p>Astronomy Teaching Assistant (ASTRO 2202) Cornell University, Professor Alex Hayes, Fall 2018 Assisted in teaching students how to write popular science articles, graded written homework and gave feedback and held office hours.</p> <p>Astronomy Teaching Assistant (ASTRO 1102) Cornell University, Professors Steve Squyres and Phil Nicholson, Spring 2018 Taught recitation sections and held office hours. Assisted in writing and grading homework assignments and exams.</p> <p>Astronomy Teaching Assistant (ASTRO 1101) Cornell University, Professor Lisa Kaltenegger, Fall 2017 Taught lab sections that involved exercises on core astronomy topics. Assisted in writing and grading homework assignments and exams.</p>
Computer Skills	<p>Languages: Proficient with Python, familiar with Matlab, C and HTML</p> <p>Operating Systems: Skilled with Windows, familiar with Linux</p> <p>Tools and Systems: Skilled with \LaTeX</p>