

Ray Sudarshan Sharma

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Education

Rutgers, The State University of New Jersey
Ph.D., Physics and Astronomy, 2022 (anticipated)

University of Washington

B.S., Physics, 2015
B.S., Astronomy, 2015

Professional Experience

Rutgers, The State University of New Jersey

Ph.D. Candidate (Adv: Alyson Brooks)

Thesis: “Growth and Feedback of Simulated Supermassive Black Holes”

- Dwarf galaxy evolution in cosmological simulations
- Impact of supermassive black holes on dwarf galaxy evolution
- Role of galaxy mergers in fueling active galactic nuclei
- Active galactic nuclei in dust radiative transfer simulations

University of Washington

Undergraduate Researcher (Adv: Eric Agol, John Ruan)

- Variability of carbon-IV emission in active galactic nuclei

Teaching and Mentoring

Rutgers, The State University of New Jersey

Teaching Assistant for Classical Mechanics I/II

Teaching Assistant for General Physics Lab I

Research Adviser for RU-PREP program

- Developed a six week long intensive research project and advised freshman undergraduates researchers

Research Adviser for undergraduate researcher

- Developed a long-term undergraduate research project and guided Rachel Campo in astronomy research and analysis techniques

Skills

Computing: Python, Javascript, C++, L^AT_EX, Git, bash

- Developer for POWDERDAY, open-source radiative transfer software
- Contributor for TANGOS, simulation analysis database tool

Languages: English (native), Hindi (native), Spanish (basic)

Awards

Co-I, NSF Astronomy & Astrophysics Grants AST-1813961 (2018-2021)

“Collaborative Research: Of Mice and Monsters – Investigating Black Hole Growth in Dwarf Galaxies”

and Grants Co-I, HST Theory Grant HST-AR-14281 (2017-2019) “Triggering and Quenching: simulations and mock observations of Active Galactic Nuclei and their hosts”

Selected Talks *Contributed Conference Talks*

- AAS Winter Meeting (Seattle, 2015/2019)
- The Galaxy Workshop (Santa Cruz, 2018/2019)
- The Art of Measuring Galaxy Physical Properties (Milan, 2019)

Invited Talks, Seminars, and Colloquia

- “Black Hole Growth and Feedback in Isolated Romulus25 Dwarf Galaxies”, Galread Seminar, Princeton University, December 2019
- “Black Hole Growth and Feedback in Isolated Romulus25 Dwarf Galaxies”, CCA Galaxy Group Meeting, Center for Computational Astrophysics, December 2019

Publications

Narayanan, Desika, Matthew J. Turk, Thomas Robitaille, Ashley J. Kelly, B. Connor McClellan, **Ray S. Sharma**, Prerak Garg, et al. 2020. “Powderday: Dust Radiative Transfer for Galaxy Simulations.” ArXiv E-Prints 2006 (June): arXiv:2006.10757.

Sharma, Ray S., Alyson M. Brooks, Rachel S. Somerville, Michael Tremmel, Jillian Bellovary, Anna C. Wright, and Thomas R. Quinn. 2020. “Black Hole Growth and Feedback in Isolated ROMULUS25 Dwarf Galaxies.” The Astrophysical Journal 897 (July): 103. <https://doi.org/10.3847/1538-4357/ab960e>.

Wright, Anna C., Michael Tremmel, Alyson M. Brooks, Ferah Munshi, Daisuke Nagai, **Ray S. Sharma**, and Thomas R. Quinn. 2020. “The Formation of Isolated Ultra-Diffuse Galaxies in Romulus25.” ArXiv E-Prints 2005 (May): arXiv:2005.07634.