Dhruba Dutta Chowdhury

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Nationality: Indian

RESEARCH INTERESTS

Classical Dwarfs and Ultra Diffuse Galaxies, Globular and Nuclear Star Clusters, Alternative Dark Matter Models (e.g., Fuzzy Dark Matter), Galaxy Dynamics

EDUCATION

Yale University, New Haven, CT, USA 2016-

- Ph.D. in Astronomy, Expected May 2022
- Advisors: Frank van den Bosch and Pieter van Dokkum
- M.S., M.Phil. in Astronomy, May 2018

Presidency University, Kolkata, India 2013-2015

- M.Sc. in Physics
- Thesis: The Sunyaev-Zel'dovich Signal from Quasar Host Halos
- Advisor: Suchetana Chatterjee

Presidency College, University of Calcutta 2010-2013

- B.Sc (Honors) in Physics
- Minor in Mathematics and Chemistry

POSITIONS

Yale University, Astronomy Department 2018-

- Graduate Research Assistant
- Advisors: Frank van den Bosch and Pieter van Dokkum

Presidency University, Physics Department 2015-2016

- Project Assistant (Junior Research Fellow)
- Project Title: Modeling the 21 cm Signal from the Dark Ages
- Advisor: Kanan Kumar Datta

AWARDS

- Sheldon Wise Pre-Doctoral Fellowship, Yale University 2017-2018
- Junior Research Fellowship, Dept. of Science & Technology, India 2015-2016
- INSPIRE scholarship, Dept. of Science & Technology, India 2010-2015
- Lilabati Ray Memorial Prize for Best Seminar, Presidency University 2015

PROFESSIONAL ACTIVITIES

- Referee for ApJ 2019-
- Yale Astronomy Graduate Student Talks SOC Member Spring 2019
- Galaxy Lunch Moderator, Yale Astronomy Department 2017-2018

TEACHING EXPERIENCE

- Teaching Fellow, Planets and Stars, Yale University Spring 2017
- Teaching Fellow, Galaxies and the Universe, Yale University Fall 2017, 2019

FIRST AUTHOR PAPERS

1. **Dutta Chowdhury, D.**, van den Bosch, F.C., Robles, V.H., van Dokkum, P. et al. "On the Random Motion of Nuclear Objects in a Fuzzy Dark Matter Halo", arXiv:2105.05268
2. **Dutta Chowdhury, D.**, van den Bosch, F.C., and van Dokkum, P. "On the Evolution of the Globular Cluster System in NGC 1052-DF2: Dynamical Friction, Globular-Globular Interactions, and Galactic Tides" 2020, ApJ, 903, 149
3. **Dutta Chowdhury, D.**, van den Bosch, F.C., and van Dokkum, P. "On the Orbital Decay of Globular Clusters in NGC 1052-DF2: Testing a Baryon Only Mass Model" 2019, ApJ, 877, 133
4. **Dutta Chowdhury, D.** and Chatterjee, S. "Sunyaev-Zel'dovich Signal from Quasar Hosts: Implications for Detection of Quasar Feedback" 2017, ApJ, 839, 34

CO-AUTHOR PAPERS

1. Shen Z., Danieli, D., van Dokkum P. et al. including **Dutta Chowdhury D.** [10 total] "A Tip of the Red Giant Branch Distance of 22.1 ± 1.2 Mpc to the Dark Matter Deficient Galaxy NGC 1052–DF2 from 40 Orbits of Hubble Space Telescope Imaging", arXiv:2104.03319
2. Ansar, S., Datta, K.K. and **Dutta Chowdhury, D.** "Impact of Inhomogeneous CMB Heating of Gas on the HI 21-cm Signal During Dark Ages" 2018, PhysRevD, 98, 103505

DRAFTS IN PREPARATION

1. **Dutta Chowdhury, D.**, van den Bosch F.C., van Dokkum, P., Robles, V.H. et al. "On the Expansion of Dwarf Galaxies in a Fuzzy Dark Matter Halo"
2. **Dutta Chowdhury, D.**, van den Bosch F.C., van Dokkum, P., Robles, V.H. et al. "Understanding the Heating Effect of FDM: Decomposing the Contribution from Soliton Random Walk, Soliton Oscillations, and Quasiparticle Kicks"

CONTRIBUTED TALKS

1. "Imprints of the Recombination History of the Universe on the HI 21-cm Signal from the Dark Ages, Epoch of Reionization Workshop, IIT Kharagpur, India, July 2016
2. "Sunyaev–Zel'dovich Signal from Quasar Hosts: Implications for Quasar Feedback Detection", Topical Conference on Gravity, Cosmology, Astronomy and Astrophysics, Eastern Region, IISER, Kolkata, India, Sept 2015

INVITED TALKS

1. "On the Dynamics of the Globular Cluster System in NGC 1052-DF2: The Galaxy Lacking Dark Matter", Physics Club Talk, Presidency University, Kolkata, India, June 2019

POSTER PRESENTATIONS

1. "On the Orbital Decay of Globular Clusters in NGC 1052-DF2: Testing a Baryon Only Mass Model", Santa Cruz Galaxy Workshop, University of California, Santa Cruz, USA, Aug 2019
2. "On the Orbital Decay of Globular Clusters in NGC 1052-DF2: Testing a Baryon Only Mass Model", Small Galaxies, Cosmic Questions Conference, Durham University, Durham, UK, July 2019
3. "Sunyaev–Zel'dovich Signal from Quasar Hosts: Implications for Quasar Feedback Detection", International Conference on Gravitation and Cosmology, IISER Mohali, India, Dec 2015

COMPUTATIONAL SKILLS

- N-Body simulations with GADGET
- Fuzzy Dark Matter simulations with GAMER (AMR Code)
- Programming skills in C, C++, FORTRAN 77, MATLAB, and Python