

Manish Sharad Hiray

Present position

- Assistant Professor

Contact Details (Mention e-mail) – fergusson.edu or despune.org



020-6765064



manish.hiray@despune.org



[linkedin.com/in/manish-hiray-315337121](https://www.linkedin.com/in/manish-hiray-315337121)

Work Experience

- Teaching: 6 years
- Research/Industrial: 5 years

Personal Profile

Reasoning my intentions for pursuing a Ph.D. in Astrophysics and choosing a career as a teacher, I would like to throw some light on the path which led me to this point until now. I always dreamed of myself as someone who stares at the sky and takes notes. Also, I have long known that these people are called astronomers, so part of choosing a career in physics is my step toward fulfilling the dream of becoming one. Hailing from a craftsman's family, I was always good with instruments and I wanted a career where instrumentation, experimentation and astronomy blend together, so I chose to become a teacher.

Currently, I am working as an Assistant Professor in Fergusson College (Autonomous), Pune at the Department of Physics and pursuing a Ph.D. in theoretical Astrophysics at Savitribai Phule Pune University. I am also developing an Observatory at Fergusson College Junior Campus Building.

Course(s) Taught (Only Titles)

1. Quantum Mechanics at MSc
2. Electrodynamics at MSc
3. Solid State Physics at MSc
4. Applied Physics at Diploma
5. C language
6. Matlab
7. Special Lab I and Special Lab II
8. General Lab I and General Lab II

Field of Specialization/Areas of Interests

- Instrumentation
- Multiwave Analysis (Radio and X-Ray)
- Data Analysis

Education

- **Ph.D.(Astrophysics):** from March 2021 till date
Title of the Thesis: “*Understanding the Energetics of Pair of Merging Galaxy Clusters*”
Name of University / Institution: Department of Physics, Savitribai Phule Pune University

- **Master of Science (Physics): 2012**
Fergusson College, Pune – 4
- **Bachelor of Science (Physics): 2008**
University of Pune, MSG College, Malegaon Camp.

Fellowship/Awards/ Certifications/Achievements/Recognitions

1. JRD Tata Fellowship
2. MahaJyoti Fellowship
3. Research Grant from IAU (International Astronomical Institute)

Member of College Committees/ Professional Bodies and Others

College Level	Professional Bodies	Others
• PG Examination		
• PG Entrance Examination		
• PG Admission		
• Observatory Coordinator		
• MSc Theory In-charge (Department Level)		

Employment History

1) Organization : Fergusson College (Autonomous), Pune-4

Role : Assistant Professor

Duration : Current

Responsibilities	<ul style="list-style-type: none"> • Teaching theory subject for M. Sc. • Conducting Practicals for M. Sc. • M. Sc. Theory Incharge
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2) Organization : Fergusson College Observatory

Role : Research Assistant

Duration : March 2017 to August 2018

Responsibilities	<ul style="list-style-type: none"> • Installation of Paramount • Software Testing and Imaging
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3) Organization : Vainnu Bapu Observatory, Kavalur

Role : Intern Trainee

Duration : September 2016 to February 2016

Responsibilities	<ul style="list-style-type: none"> • Development and Installation of Cloud Sensor for VBT Telescope • Science Popularisation
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4) Organization : Fergusson College Observatory

Role : Research Assistant

Duration : January 2014 to August 2016

Responsibilities	<ul style="list-style-type: none"> • Development of Dome / Observatory Roof • Installation • Testing
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Research Publications in National and International Journals

1. Surajit Paul, Pratik Gupta, Sameer Salunke, Shubham Bhagat, Satish Sonkamble **Manish Hiray**, Pratik Dabhade & Somak Raychaudhury (2021). "uGMRT detection of cluster radio emission in low-mass Planck SZ clusters". Accepted 2021 July 06 Monthly Notices of the Royal Astronomical Society (2021).

Participation in Conferences/Seminars/Symposia/Workshop:

1. 2021, July: Participated in Advanced workshop for AstroSat data analysis (online) at Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune
2. 2020, February: Oral presentation Non-Thermal Synchrotron Radio Emission from Large Scale Structures of the Universe and its Detection Techniques at Raman Memorial Conference organized by the Department of Physics, Savitribai Phule Pune University, Pune.
3. 2019, August: Participated in Radio Astronomy School 2019 at National Centre for Radio Astrophysics (NCRA), Pune.
4. 2016 May: Participated in the Astronomical Society of India Meet at the University of Kashmir at Srinagar.
5. 2015 February: Participated in Astronomical Society of India Meet at National Centre for Radio Astrophysics (NCRA), Pune
6. 2014 September: Participated in Workshop on the fabrication of Night Sky Photometer at Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune.

Events Organized/Coordinated:

Sr. No.	Name of the Event	Name of organizing Institute/ College/ University	Nature of contribution	Dates
1	Summer School	Fergusson College (Autonomous), Pune-4	Organizer and Co-Ordinator	July 2022
2	Extra credit course on Basic IPython	Fergusson College (Autonomous), Pune-4	Organizer and Co-Ordinator	March 2022
3	Raman Memorial Conference	Savitribai Phule Pune University, Ganeshkhind	Co-Ordinator	March 2021
4	Skill Development Workshop on Astronomical Techniques	Fergusson College (Autonomous), Pune-4	Co-Ordinator	April 2018
5	DST Workshop on Hands-on Astronomy instruments	Fergusson College (Autonomous), Pune-4	Organizer	April 2017

Additional skills/Activities

1. Imaging <ol style="list-style-type: none">a. CASA: Radio Imagingb. AIPS: Radio Imagingc. HEASoft: X-Ray Imagingd. CIAO: X-Ray Imaginge. Maxim DL: Optical Imagingf. IRAF: Optical Imaging	2. Modelling Software <ol style="list-style-type: none">a. DS Mechanicalb. Fusion 360c. Curad. AutoCADe. MatLab
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3. Programming Language <ul style="list-style-type: none"> a. C b. Python c. Matlab d. Delphi 	4. Instrumentation Skills <ul style="list-style-type: none"> a. Optical Telescopes b. Solar Telescope c. CCD d. CMOS e. Photometer f. Power and Electronic Instruments
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Course Content Developed (e-content)

1. Quantum Mechanics
2. Electrodynamics