

Dr. MAHENDER AROORI

ASSISTANT PROFESSOR (contract basis)

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Employment History

2012-Till now- Assistant Professor (contract), Department of Astronomy, University College of Science, Hyderabad-500007, Telangana, India.

2010-2012- Part-time teaching faculty, Department of Astronomy, University College of Science, Hyderabad-500007, Telangana, India.

2007-2010- Lecture in Narayana Junior College, Tarnaka, Hyderabad, Andhra Pradesh, India.

Education

2013-2022- Ph.D. Osmania University

Thesis title: **A Study of Radio Emissions from the Solar Atmosphere**

Ph.D. Advisor: Prof. G. Yellaiah, Department of Astronomy, Osmania University, Hyderabad, Telangana-500007, India.

2005-2007- M.Sc. Astronomy, Department of Astronomy, Osmania University, Hyderabad, Telangana-500007, India.

2002-2005- B.Sc. Mathematics, Physics, Chemistry in Nizam College, Osmania University, Hyderabad, Telangana, India.

2000-2002- Board of Intermediate Education, Mathematics, Physics, Chemistry, Vidyanikethan Junior College, Karunapuram, Peddapendial, Dharmasager, Warangal, Telangana.

1999-2000- Secondary School Education, St Gabriel's High School, Kazipet, Warangal, Telangana.

Research Interest

The field of specialization is Solar Physics and Solar Radio Astronomy, especially the solar radio emission from the sun's atmosphere. Studying time series analysis of solar radio emission at different frequencies to compare with that of daily sunspot number (SSN) during different solar cycles, the studying frequencies range covers the solar atmosphere from the photosphere to the corona. And also studied low-frequency (45-410 MHz) type-III solar radio bursts observed using the e-Compound Astronomical Low-Cost Low-Frequency Instrument for Spectroscopy and Transportable Observatory (e-CALLISTO) spectrometer located at different locations throughout the globe. Actively participated in various international and national symposiums and presented papers in the International Astronomical Union Symposium (IAU) N0.335 at the University of Exeter, United Kingdom, and IAUS340 at Jaipur, India. Currently doing collaborative research work with scientists of Indian Institute of Astrophysics (IIA) Bengaluru, And also doing joint research collaboration work with Dr. Raffaella D'Amicis, Istituto di Astrofisica e Planetologia Spaziali (IASP) at Istituto Nazionale di Astrofisica (INAF), Rome, Italy and Dr. Denise Perrone, Agenzia Spaziale Italiana (ASI) on study the origin and evolution of Alfvénic Solar Wind streams observed by using **Solar Orbiter**, **Wind** and **Parker Solar Orbiter** spacecrafts datasets and their geoeffectiveness.

Research publications

1. **Variation of Quiet Sun Radiation during Solar Cycles 23 and 24.** **Mahender Aroori**, K Chenna Reddy and G Yellaiah, Proceedings IAU Symposium No. 335, 2017 C. Foullon & O.E Malandraki, eds. Space Weather of the Heliosphere: Process and Forecasts, Volume-335, pages 11-13. <http://doi:10.1017/S1743921317007992>.
2. **A Statistical Study of Low-Frequency Solar Radio Type III Bursts.** **Mahender Aroori**, K. Sasikumar Raja, R. Ramesh, Vemareddy Panditi, Christian Monstein, and Yellaiah Ganji. Solar Physics (2020) 295:153. <https://doi.org/10.1007/s11207-020-01722-z>.

3. **Mid-term Periodicities in Solar Radio Emission Corresponding to Sunspot Number During Solar Cycle 23.** **Mahender Aroori**, Panditi Vemareddy, Partha Chowdhury and Ganji Yellaiah. Solar Physics (2021)296:43. <http://doi.org/10.1007/s11207-021-01793-6>.
4. **Periodicities in Solar Microwave Emissions during Solar Cycles 20- 24** (Recently accepted in JASTP journal). **Mahender Aroori**, Vemareddy Panditi, K Sasikumar Raja, Kazumasa Iwai, and G Yellaiah.

Skills

1. Strong reading, writing, and speaking competencies in English, Telugu, and Hindi.
2. Coding: **MATLAB, PYTHON, and IDL.**

List of Conference Presentations

1. Presented a poster in the **34th meeting of the Astronomical Society of India** held at the Kashmir University, Srinagar during 10-13 May 2016 titled “**Correlation Studies between Solar Radio Flux in Different Frequencies and Sunspot Number During the Solar Cycle 23,24**”. [**Mahender Aroori et al., 2016**] Mahender Aroori., K Chenna Reddy., and Yellaiah, G. (2016).
2. Presented a poster in the International Astronomical Union Symposium 335(Space Weather of the Heliosphere: Processes and Forecasts) meeting held at University Exeter, United Kingdom, England during 17-21 July 2017 titled “**Variation of Quiet Sun Radiation during Solar Cycle 23 and 24**” [**Mahender Aroori et al., 2016**] Mahender Aroori., K Chenna Reddy., and Yellaiah, G. (2017).
3. Presented a poster in the **International Astronomical Union Symposium 340** (Long Term Datasets for The Understanding of Solar and Magnetic Cycles) meeting held at B.M. Birla Auditorium, Jaipur, India during 19-24, February 2018 titled “**Microwave Studies of Quiet Sun Radiation during Solar Minimum and Maximum Phase of Solar Cycle 23 and 24**” [**Mahender Aroori et al., 2018**] Mahender Aroori., K Chenna Reddy., and Yellaiah, G. (2018).
4. Presented a poster in the **39th annual meeting of the Astronomical Society of India** held online hosted by ICTS-TIFR Bengaluru, IISER Mohali, IIT-Indore, and IUCAA-Pune during 18 - 23 February 2021 titled “**A Statistical Study of Low-Frequency Solar Radio Type-III Bursts**” [**Mahender Aroori et al., 2021**] Mahender, A., Sasikumar Raja, K., Ramesh, R., Panditi, V., Monstein, C., and Ganji, Y. (2021).
5. Oral presentation was given at the **15th Quadrennial Solar-Terrestrial Physics Symposium (STP-15) from 21-25 February-2022**. A virtual event hosted by the Indian Institute of Geomagnetism (IIG). The presentation titled “**Short and Rieger Type Periodicities in Solar Microwave Emission Using Nobeyama Radio Polarimeters Data during Solar Cycle 20-24**”

International Schools Attended

1. **DST-SERB School on Basics of Atmospheric Sciences held during 4-28, June-2014 in the Department of Physics, S.V. University, Tirupati, India.**
2. **SCOSTEP_ISWI International School on Space Sciences held at Smt. Kasturbai Walchand College, Sangli, India from 7-17th November-2016.**
3. **Coronal and Interplanetary Shocks: Analysis of Data from Space and Ground-based Instruments held from 6-17th, January, 2020, Kodaikanal, India.**
4. **NASA's "Living with A Star" 2023 Seventeenth Heliophysics Summer School, July 17-21, 2023, "Observational Heliophysics".**

Fellowships

1. Selected for **COSPAR Capacity Building Fellowship Programme (Prof. Mariano Mendez, PCB Chair for Fellowships)** in the year of July, 2023. On behalf of this programme, I have visited Dr. Raffaella D'Amicis and Dr. Denise Perrone, Institute for Space Astrophysics and Planetology (IAPS) at INAF, Rome, Italy for joint research collaboration during the period of 9-27th, October, 2023.