



South African Radio Astronomy Observatory

Postdoctoral Fellowships for 2025

Application Guide

Read this Guide Carefully Before Completing an Application Form

Closing Date for Applicants: 31 August 2024

Apply Online at: <https://nrfconnect.nrf.ac.za>

The South African Radio Astronomy Observatory (SARAO) invites applications from suitably qualified candidates for three postdoctoral fellowships, commencing in 2025. Please note that successful applicants will be notified by SARAO, by 15 December 2024. If you have not heard from SARAO by 15 December 2024, please assume that your application was NOT successful.

1 CLOSING DATE FOR SARAO POSTDOCTORAL FELLOWSHIPS FOR 2025

The universities set their own internal closing dates for applications. Please find out from the university where you intend completing your postdoctoral fellowship what their internal closing date is, and ensure you submit your application by that date.

2 ELIGIBILITY FOR SARAO POSTDOCTORAL FELLOWSHIPS FOR 2025

- 2.1 This call is open to all nationalities.
- 2.2 Applicants must have been active in research since obtaining their Doctoral degree. In the case of a break in research, an applicant must have obtained his/her Doctoral degree on, or after, 30 September 2020.
- 2.3 Successful applicants must be able to commence with their postdoctoral fellowships in South Africa on, or before, 1 October 2025.

3 STRUCTURE AND FUNDING LEVELS OF SARAO POSTDOCTORAL FELLOWSHIPS FOR 2025

- 3.1 Postdoctoral fellowships are only tenable at South African universities.
- 3.2 Postdoctoral fellowships are awarded for a period of three years.
- 3.3 Renewal of a postdoctoral fellowship each year is subject to satisfactory performance, which will be determined through annual progress reports (APRs), detailing progress on deliverables as per the original research proposal. In the APRs, deliverables should be demonstrated by showing evidence thereof e.g., senior authorship peer-reviewed papers, conference proceedings, developed hardware, preliminary results of simulations or data analysis, etc. Failure to submit a progress report on time may result in the cancelation of the fellowship for the current and subsequent years.
- 3.4 The postdoctoral fellowship level for 2025 is R460,410. The fellowship amount is supplemented by a travel grant of R48,000 per annum, and an equipment grant of R72 000 for the duration of the fellowship.
- 3.5 There is NO relocation grant for SARAO postdoctoral fellows, and successful applicants may NOT use their travel grants to cover the costs of their relocation to South Africa.

4 RESEARCH PROPOSALS AND HOSTS/SUPERVISORS FOR SARAQ POSTDOCTORAL FELLOWSHIPS FOR 2025

- 4.1 All postdoctoral fellowship applications must be endorsed by a host/supervisor, at the university in South Africa where the fellowship will be undertaken. **A list of supervisors who have indicated that they are willing to host SARAQ postdoctoral fellows in 2025, is provided in the table below.**
- 4.2 Applicants are required to investigate the research specialisations of the individual hosts and institutions to inform their choices, and match their own strengths and interests. Applicants must contact the respective hosts to discuss the willingness of a host to endorse the application, and to discuss and draft a research project and implementation plan, for submission as part of the application.
- 4.3 **For 2025, SARAQ will consider research project proposals that involve the scientific use or technical development of all radio astronomy and geodesy facilities located and operated in South Africa under the auspices of SARAQ, including guest instruments. Relevant data for any research proposed must be available in 2025. Priority will be given to projects directly associated with MeerKAT. Proposals linked to guest instruments will need to explicitly provide proof of the availability of all resources required, including the maturity of the particular instrument (and the availability of relevant data).**

5 SARAQ CONTACT INFORMATION

Queries with regards to the application requirements or the application procedure, may be directed to:

Dr. Mthuthuzeli Zamxaka

Email: mzamxaka@sarao.ac.za

Telephone: +27 11 268 3424

Table 1: Supervisors/Hosts for SARA0-funded Postdoctoral Fellowships in 2025

Name	University	Host/Supervisor Email Address	Research Specialisation
Prof. Mattia Vaccari	University of Cape Town	mattia.vaccari@uct.ac.za	Machine Learning Applications in Multi-Wavelength Astronomy, Multi-Wavelength Galaxy/AGN Evolution, Multi-Wavelength Time-Domain Surveys
Dr. Kshitij Thorat	University of Pretoria	kshitij.thorat@up.ac.za	Radio Galaxies, Machine Learning Applications to Radio Astronomy
Prof. Yin-Zhe Ma	Stellenbosch University	mayinzhe@sun.ac.za	Radio Search of Dark Matter, 21-cm Cosmology, large-scale structure of the Universe, Pulsar Timing Array
Prof. Mario Santos	University of the Western Cape	mgrsantos@uwc.ac.za	Cosmology with radio telescopes
Prof. John McKean	SARA0 / University of Pretoria	john.mckean@up.ac.za	Gravitational Lensing; Dark Matter; Machine Learning; Active galaxies; Starburst galaxies; high-z
Prof. Kavilan Moodley	University of KwaZulu-Natal	moodleyk41@ukzn.ac.za; kavilan.moodley@gmail.com	Radio cosmology, 21cm intensity mapping, diffuse emission in galaxy clusters
Prof. Roger Deane	Wits University / University of Pretoria	roger.deane@wits.ac.za	continuum and spectral-line galaxy evolution science with MeerKAT; binary SMBHs; gravitational lensing; Bayesian and machine learning applications
Prof. Tinus Stander	University of Pretoria	tinus.stander@up.ac.za	Wideband and multi-band receivers and receiver components development
Prof. Patrick Woudt	University of Venda	patrick.woudt@uct.ac.za	Radio transients, Cataclysmic Variables and White Dwarf pulsars, Time-Domain Astrophysics
Dr. Jacinta Delhaize	University of Cape Town	j.delhaize@uct.ac.za	Galaxy evolution, extragalactic HI and radio continuum surveys, source finding, HI stacking, HI absorption, AGN, radio galaxies, radio source decomposition and multiwavelength analysis, infrared-radio correlation
Prof. Matt Hilton	University of the Witwatersrand	matt.hilton@wits.ac.za	Galaxy evolution, AGNs, diffuse emission in galaxy clusters
Dr. Marisa Geyer	University of Cape Town	marisa.geyer@uct.ac.za	Pulsar science, Pulsar Timing, Relativistic Binaries, Gravitational Wave Physics, Fast Radio Bursts, Neutron star theory.
Prof. James Chibueze	University of South Africa	chibujo@unisa.ac.za	Galactic star formation, masers and radio galaxies
A/Prof. Sarah Blyth	University of Cape Town	sarah.blyth@uct.ac.za	HI and galaxy evolution
Dr. Kenda Knowles	Rhodes University	k.knowles@ru.ac.za	Continuum extragalactic radio astronomy -- multiwavelength studies of galaxy clusters; AGN; radio galaxies
Dr. Michelle Lochner	University of the Western Cape/SARA0	dr.michelle.lochner@gmail.com	Machine learning and statistics in multiwavelength astronomy, studies of anomalous radio galaxies in MeerKAT data, machine learning-driven scientific discovery in large datasets
Dr. Geoff Beck	University of the Witwatersrand	geoffrey.beck@wits.ac.za	Indirect dark matter searches with radio telescopes
Distinguished Prof. Oleg Smirnov	Rhodes University	o.smirnov@ru.ac.za	Calibration and imaging, algorithms, observational techniques and technologies, software
Prof. Amare Abebe	North-West University	AmareAbebe.Gidelew@nwu.ac.za	Cosmology, observational constraints from large-scale structure
Dr. Lucia Marchetti	University of Cape Town	lucia.marchetti@uct.ac.za	Multiwavelength extragalactic astronomy, Galaxy Evolution, AGN studies, Strong gravitational lensing, LSST/Euclid collaborations, Data Visualisation.
Prof. Warren du Plessis	University of Pretoria	wduplessis@up.ac.za	Signal processing, electromagnetic systems, sparse sampling... basically things that operate in the electromagnetic spectrum.
Prof. Lerothodi Leeuw	University of the Western Cape	Lerothodi@gmail.com	Multiwavelength Extragalactic Astronomy; Galaxy Evolution; AGN; EoR; Astroparticle Physics.
Prof. Matthys Botha	Stellenbosch University	mmbbotha@sun.ac.za	Computational electromagnetics for modelling large-scale radio astronomy arrays.
Dr. Shajid Haque	University of Cape Town	shajid.haque@uct.ac.za	Applications of quantum information tools in cosmology and astrophysics, cosmology, modified gravity.