South African Radio Astronomy Observatory

Application Guide
for
SARAO Freestanding Postdoctoral Fellowships for 2027

READ THE ENTIRE GUIDE BEFORE APPLYING FOR A SARAO FREESTANDING POSTDOCTORAL FELLOWSHIP

CLOSING DATE FOR APPLICATIONS: 31 August 2026

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1. Eligibility for SARAO Postdoctoral Fellowships

1.1. **Eligibility: Commencement of SARAO Postdoctoral Fellowship in South Africa**

- Postdoctoral fellowships are only tenable at South African universities, and all applications must be endorsed by the host/supervisor at the university where the fellowship will be undertaken.
- Successful applicants must be able to commence with their postdoctoral fellowship in South Africa on or before 1 October 2027.

1.2. **Eligibility: Postgraduate and Other Research**

SARAO will consider applications from:

- Applicants who achieved at least 65% for their Master's degree, and who are currently in the final year of a doctoral degree, where the research is relevant to:
    - the science of the MeerKAT and/or SKA radio telescopes;
    - the science of other operational radio astronomy instruments; or
    - engineering fields relevant to radio astronomy technologies.

Note: In the case where an applicant who is currently in the final year of their doctoral degree is awarded a SARAO postdoctoral fellowship, does not achieve at least 65% for their doctoral degree, the fellowship award will be revoked.

OR

- Applicants who have completed a relevant doctoral degree, for which they obtained at least 65%, and who are currently employed in a research position, where their research is relevant to:
    - the science of the MeerKAT and/or SKA radio telescopes;
    - the science of other operational radio astronomy instruments; or
    - engineering fields relevant to radio astronomy technologies.

1.3. **Eligibility: Postdoctoral Research Proposals (see Table 1 for supervisors available to host SARAO Postdoctoral Fellows in 2027)**

SARAO will consider research proposals that involve:

- Exploiting available data from key radio astronomy instruments located in South Africa, i.e. MeerKAT, HERA, and the HartRAO facilities (astronomical VLBI, astrometry and geodesy). Amongst these, MeerKAT is the highest priority. Note: Multi-wavelength projects with direct links to the above instruments may also be considered.

OR

- Engineering topics that are directly related to the needs of building and operating radio telescopes (antenna, receiver, signal processing, data analysis and data recording systems associated with radio telescopes and geodesy instruments; real-time digital signal processing instrumentation for radio astronomy; hardware and data analysis systems for detecting, monitoring and locating sources of Radio Frequency Interference (RFI), including the use of telescope data.

2. How to apply for a SARAO Freestanding Postdoctoral Fellowship

2.1. Engage with a supervisor/s (Table 1) whose area/s of research align with your doctoral and other research experience, to develop a research proposal for your postdoctoral fellowship. The details of this proposal must be included in the relevant section of the application form.
2.2. Application forms are accessible online at https://nrfconnect.nrf.ac.za
2.3. Complete the PROFILE section first.
2.4. To access the application form, select MY APPLICATIONS, then Postdoctoral Grants, and then SARAO Postdoctoral Fellowships.
2.5. Applicants may only submit ONE application.
2.6. Applicants MUST upload all 7 required documents (see Section 3), in the Attachments Section of the application form. **IF ANY OF THESE 7 DOCUMENTS ARE NOT ATTACHED TO YOUR APPLICATION, SARAO WILL NOT CONSIDER YOUR APPLICATION FOR FUNDING.**
2.7. Your application must be supported by at least two letters of reference (see Section 4). **IF YOUR APPLICATION IS NOT SUPPORTED BY TWO LETTERS OF REFERENCE SARAO WILL NOT CONSIDER YOUR APPLICATION FOR FUNDING.**
2.8. Once you submit your application, it will automatically be routed to the institution where you are applying.
2.9. In order for your application to be considered for funding, you must submit your application on or before the closing date.

3. Supporting Documents to be Attached to your Application Form

You MUST upload **ALL 7** documents listed below, in the **Attachments Section** of the application form.

IF ANY OF THESE DOCUMENTS ARE NOT ATTACHED, SARAO WILL NOT CONSIDER YOUR APPLICATION!!!!!

Document	Details
1. Identity Document or Passport	- For South African citizens and permanent residents: A copy of your South African ID - For non-South Africans: A copy of your passport
2. University Results	- All your university academic results, from the start of your university studies until now, and where relevant for all other degrees completed to date. - **Please attach all your results as ONE PDF Document**
3. An up-to-date Curriculum Vitae	
4. Supervisor/host-agreement letter	- The South African-based supervisor/host of your postdoctoral fellowship must provide you with a signed letter, on a university

	letterhead, stating that he/she has agreed to supervise/host you for the postdoctoral fellowship.
5. Letter of Motivation	- The motivation is CRITICAL to the review of your application. Take the time to draft an excellent motivation! - You must provide a letter of about 1000 words motivating why you should be awarded a SARAO Postdoctoral Fellowship.
6. Doctoral Research Synopsis	- Provide a 500-word synopsis/abstract of your doctoral research project.
7. Written confirmation of the availability of data/instrument/equipment/facilities required for the postdoctoral research	- Written confirmation, on a letterhead, from the relevant observatory, university authority, or LSP PI, stating that the data/instrument/equipment/facilities required for the postdoctoral research is available at the time of submission of the postdoctoral fellowship application.

4. Letters of Reference

Your application must be supported by **AT LEAST TWO** letters of reference. Please ask at least two academic/faculty/research referees to submit letters of reference to study.research@sarao.ac.za, before 31 August 2026. Please ask the referees to include the following information in their letter of reference:

- The capacity in which the referee knows the applicant, and for how long they have known the applicant.
- The applicant's research capabilities in terms of attitude, initiative, understanding of the subject, progress against deliverables, publications etc.
- Any other relevant comments regarding the applicant.

5. Structure and Funding Levels for SARAO Freestanding Postdoctoral fellowship

5.1. The postdoctoral fellowship level for 2027 is R488,000. The fellowship amount is supplemented by a travel grant of R67,000 per annum, and a once-off equipment grant of R40 000 for the duration of the fellowship.

5.2. There is no relocation grant linked to SARAO postdoctoral fellowships.

5.3. The duration of a SARAO postdoctoral fellowship is three years.

6. Enquiries regarding SARAO Freestanding Doctoral Scholarships

Contact: study.research@sarao.ac.za

Table 1: Supervisors for Postdoctoral Fellowships for 2027

Host/Supervisor	University	Host/Supervisor Email	Areas of Research Specialisation
Prof Mattia Vaccari	University of Cape Town	mattia.vaccari@uct.ac.za	Machine Learning Applications in Astronomy, Multi-Wavelength Galaxy/AGN Evolution, Multi-Wavelength Time-Domain Surveys
Dr Jacinta Delhaize	University of Cape Town	j.delhaize@uct.ac.za	Galaxy evolution, extragalactic HI and radio continuum surveys, AGN, star formation, nearby and high-redshift statistical detection of HI
Dr Kenda Knowles	Rhodes University	k.knowles@ru.ac.za	Galaxy clusters, Magnetism, Radio galaxies/AGN, Exploiting extragalactic radio survey data
Prof Kavilan Moodley	University of KwaZulu-Natal	kavilan.moodley@gmail.com	Radio cosmology, 21cm intensity mapping, diffuse emission in galaxy clusters
Dr Lucia Marchetti	University of Cape Town	lucia.marchetti@uct.ac.za	Multiwavelength Galaxy/AGN Formation and evolution, Strong gravitational lensing, Big Data visualisation techniques
Prof Lerothodi Leeuw	University of Pretoria	lerothodi@gmail.com	Galaxy Evolution. Epoch of Reionization, Astro-Particle Physics. Physics Communication and Education
Prof Tinus Stander	University of Pretoria	tinus.stander@up.ac.za	Microwave and mm-wave electronics, microelectronics and receivers
Prof Yin-Zhe Ma	Stellenbosch University	mayinzhe@sun.ac.za	21cm intensity mapping, radio galaxy survey, Epoch of Reionization, Radio search for dark matter
Prof Marcellin Atemkeng	Rhodes University	m.atemkeng@ru.ac.za	Radio Interferometric Techniques, Machine Learning for Radio Astronomy, Data Compression for Radio Interferometric Arrays, Explainable Deep Learning for Radio Astronomy
Prof James Chibueze	University of South Africa	chibujo@unisa.ac.za	MeerKAT HI study of complex structures in the Milky Way
Prof Oleg Smirnov	Rhodes University	o.smirnov@ru.ac.za	Observational techniques, calibration and imaging algorithms, transient detection pipelines, radio astronomy software
Dr Geoff Beck	University of the Witwatersrand	geoffrey.beck@wits.ac.za	Multi-frequency indirect dark matter searches, rotation curves and dark matter
Prof Amanda Weltman	University of Cape Town	amanda.weltman@uct.ac.za	Fast Radio Bursts, Radio Cosmology, Dark Energy, fundamental physics
Dr Marisa Geyer	University of Cape Town	marisa.geyer@uct.ac.za	Pulsars, transients, fundamental physics, gravitational radiation
Prof Matt Hilton	University of the Witwatersrand	matt.hilton@wits.ac.za	Galaxy clusters, diffuse radio emission in clusters, galaxy evolution (star formation and AGNs in/around cluster environments)
Prof Mario Santos	University of the Western Cape	mgrsantos@uwc.ac.za	Cosmology with radio telescopes, 21cm intensity mapping with MeerKAT and the SKA. Reionization with SKA-Low and HERA
Prof Roger Deane	IDIA/University of Cape Town	roger@idia.ac.za	MeerKAT-South Pole Telescope 800 deg^2 Survey science; Strong lensing and galaxy evolution with MeerKAT(+); dual/binary SMBHs; Event Horizon Telescope science and algorithms, VLBI surveys of MeerKAT-discovered high-z megamasers
A/Prof Sarah Blyth	University of Cape Town	sarblyth@ast.uct.ac.za	HI and galaxy evolution, MeerKAT LADUMA Large Survey
A/Prof Alvaro de la Cruz-Dombriz	University of Cape Town	alvaro.delacruzdombriz@uct.ac.za	Large-scale structure and redshift-space distortion with SKA, dark matter detection with MeerKAT and SKA, theoretical cosmology, black holes and compact objects

Prof Gianni Bernardi	Rhodes University	g.bernardi@ru.ac.za	21 cm epoch of reionization and cosmology, galaxy clusters, fast radio bursts, radio transients, dark matter, interferometric techniques (calibration and imaging).
Prof Matthys Botha	Stellenbosch University	mmbotha@sun.ac.za	Computational electromagnetics for radiation and scattering analysis
Prof Subharthi Ray	University of KwaZulu-Natal	rays@ukzn.ac.za	Neutron stars and pulsars - transport properties of dense matter, pulsar magnetic fields and emission mechanism of radio pulsars
A/Prof Anna Sergeevna Bosman	University of Pretoria	anna.bosman@up.ac.za	Machine learning for radio astronomy, deep learning applied to radio interferometric data, computer vision applied to radio astronomy data, anomaly detection in radio survey images, radio astronomical image denoising, automated data analysis
Prof Kshitij Thorat	University of Pretoria	kshitij.thorat@up.ac.za	Radio Galaxies, Diffuse emission from LSS, Radio AGN environments, Radio continuum surveys, Machine Learning Applications to Radio Astronomy
Dr Sphesihle Makhathini	University of the Witwatersrand	sphesihle.makhathini@wits.ac.za	Radio Astronomy calibration imaging and simulation techniques, radio astronomy software and workflows, radio galaxies, dark matter searches, technosignatures
Prof Michelle Lochner	University of the Western Cape	mlochner@uwc.ac.za	Machine learning applied to radio and optical data, unsupervised learning, anomaly detection, multiwavelength foundation models
Prof John McKean	University of Pretoria	john.mckean@up.ac.za	Gravitational lensing (dark matter, resolved studies of high-z galaxies; galaxy formation); High resolution optical/IR, mm and radio imaging (w/ JWST, HST, ALMA, LOFAR, VLA, global VLBI)
Dr Sarah White	South African Astronomical Observatory	sarahwhite.astro@gmail.com	Active galactic nuclei (AGN), galaxy evolution, multiwavelength astronomy, radio interferometry (with MeerKAT, MWA, VLA, ATCA), optical/NIR spectroscopy (with SALT, Keck, WHT)
Prof D.J. Pisano	University of Cape Town	dj.pisano@uct.ac.za	Galaxy formation and evolution; HI in and around galaxies; comets
Dr Jacki Gilmore	Stellenbosch University	jackivdm@sun.ac.za	Antenna Array design and characterisation.
Dr Heinrich Laue	University of Pretoria	heinrich.laue@up.ac.za	Antennas and arrays for radio telescopes, radio-frequency interference (RFI) detection and mitigation, and water vapour radiometry
Dr Johan Schoeman	University of Pretoria	j.schoeman@up.ac.za	Real-time digital signal processing instrumentation for radio astronomy, specifically using FPGA and GPU platforms.
Dr Sinenhlanhla Precious Sikhosana	University of KwaZulu-Natal	sneprec@gmail.com	MeerKAT data reduction, galaxy clusters, extended radio galaxies, and polarisation properties of radio sources
Prof Dirk de Villiers	Stellenbosch University	ddv@sun.ac.za	Radio astronomy antenna and instrumentation design and characterization
Prof Patrick Woudt	University of Cape Town	patrick.woudt@uct.ac.za	MeerKAT observations of Cataclysmic Variables and White Dwarf Pulsars
Prof Andrew Chen	University of the Witwatersrand	andrew.chen@wits.ac.za	MeerKAT observations of intracluster plasmas
Dr Mpati Ramatsoku	Rhodes University	m.ramatsoku@ru.ac.za	Galaxy evolution, environmental effects on HI
Prof Andrew Baker	University of the Western Cape	ajbaker@physics.rutgers.edu	Galaxy evolution; radio, millimetre, and submillimetre observations of interstellar matter; deep HI surveys

Dr Sthabile Kolwa	University of South Africa	kolwasn@unisa.ac.za	Active galactic nuclei populations (w/ MeerKAT, VLA, uGMRT), circumgalatic medium & baryonic feedback (optical IFU, mm/sub-mm), early black-hole formation (w/ JWST), anomaly detection in the image and the time domain (LSST)
Dr Stanley Kuja	Rhodes University	s.kuja@ru.ac.za	Electromagnetic compatibility and RFI mitigation in complex RF systems and electromagnetic environment