



SARAO

South African Radio
Astronomy Observatory

SOUTH AFRICAN RADIO ASTRONOMY OBSERVATORY

POSTDOCTORAL FELLOWSHIPS 2020

APPLICATION GUIDE

**READ CAREFULLY BEFORE COMPLETING AN APPLICATION
FORM**

CLOSING DATE FOR APPLICATIONS: 30 SEPTEMBER 2019

Application forms are available at <https://skagrants.nrf.ac.za>

The South African Radio Astronomy Observatory (SARAO) invites applications from suitably qualified candidates for five postdoctoral fellowships, commencing in 2020. Please note that successful applicants will be notified by 22 November 2019. If you have not heard from SARAO by 22 November 2019, please assume that your application was NOT successful.

1 ELIGIBILITY FOR SARAO POSTDOCTORAL FELLOWSHIPS FOR 2020

- 1.1 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 2015.
- 1.2 Successful applicants must be able to commence with their postdoctoral fellowships in South Africa on, or before, 1 October 2020.
- 1.3 **For 2020, SARAO will only consider post-doctoral applications that focus on observational research programmes, which utilise key existing radio astronomy instruments located in South Africa. These include MeerKAT, HERA, C-BASS, early versions of HIRAX, and HartRAO facilities (including astrometry and geodesy applications). Amongst these, MeerKAT is the highest priority area.**

2 STRUCTURE AND FUNDING LEVELS OF SARAO POSTDOCTORAL FELLOWSHIPS FOR 2020

- 2.1 Postdoctoral fellowships are only tenable at South African universities.
- 2.2 Postdoctoral fellowships are awarded for a period of three years. Renewal of a postdoctoral fellowship for the second and third year is at the sole discretion of SARAO, and is subject to satisfactory performance, which will be determined from Annual Progress Reports, detailing progress on deliverables as per the original research proposal. In the report, deliverables should be demonstrated by showing evidence thereof e.g. senior authorship peer-reviewed papers, developed hardware, preliminary results of simulations or data analysis, etc.
- 2.3 The current value of a SARAO postdoctoral fellowship is ZAR 390,000 per annum (non-taxable). (Please note that the current value of the postdoctoral fellowship may be adjusted in 2020, to account for annual inflation changes.) The fellowship is supplemented by travel and equipment grants.
- 2.4 There is no relocation grant linked to the postdoctoral fellowships.

3 RESEARCH PROPOSALS AND HOSTS/SUPERVISORS FOR SARAO POSTDOCTORAL FELLOWSHIPS FOR 2020

- 3.1 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 SARAO post-doctoral fellows is provided in the table below.** 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.

- 3.2 **For 2020, SARAO will only consider post-doctoral applications that focus on observational research programmes, which utilise key existing radio astronomy instruments located in South Africa. These include MeerKAT, HERA, C-BASS, early versions of HIRAX, and HartRAO facilities (including astrometry and geodesy applications). Amongst these, MeerKAT is the highest priority area.**

Table 1: Postdoctoral Fellowship Supervisors/hosts for 2020

Host/Supervisor	University	Host/Supervisor Email Address	Research Specialisation
Prof Mattia Vaccari	University of the Western Cape	mattia.vaccari@gmail.com	MeerKAT Observational Research Programmes
Professor Oleg Smirnov	Rhodes University	o.smirnov@ru.ac.za	Observational research programmes, which utilise key existing radio astronomy instruments located in South Africa, with an emphasis on algorithms and techniques.
Associate Professor Amanda Weltman	University of Cape Town	Amanda.weltman@uct.ac.za	HIRAX, 21 cm Intensity Mapping for HIRAX and MeerKAT, FRB cosmology for HIRAX and MeerKAT.
Professor Aris Karastergiou	University of the Western Cape or Rhodes University	aris.karastergiou@physics.ox.ac.uk	MeerKAT (Pulsars)
Dr Ian Heywood	Rhodes University	ian.heywood@physics.ox.ac.uk	MeerKAT
Professor Bruce Bassett	University of Cape Town	bruce.a.bassett@gmail.com	MeerKAT
Professor Yin-Zhe Ma	University of KwaZulu-Natal	ma@ukzn.ac.za	MeerKAT MIGHTEE project
Professor Kavilan Moodley	University of KwaZulu-Natal	kavilan.moodley@gmail.com	MeerKAT, HIRAX
Professor Russ Taylor	University of Cape Town and University of the Western Cape	russ@idia.ac.za	Observational programmes with MeerKAT, including the MIGHTEE Large Survey Project
Professor Andrew Chen	University of the Witwatersrand	andrew.chen@wits.ac.za	MeerKAT, HERA, HartRAO facilities
Professor Matt Hilton	University of KwaZulu-Natal	hiltonm@ukzn.ac.za	Science with MeerKAT
Dr Sarah Blyth	University of Cape Town	sarblyth@ast.uct.ac.za	MeerKAT related observational projects
Professor Romeel Dave	University of the Western Cape	romeeld@gmail.com	Mock catalogs for MeerKAT (MIGHTEE/LADUMA), HIRAX, and/or HERA
Professor Roger Deane	University of Pretoria	roger.deane@up.ac.za	MeerKAT (open time awarded projects including gravitationally lensed HI, dual AGN, galaxy evolution, high redshift HI using statistical probes)
Professor Renée C. Kraan-Korteweg	University of Cape Town	kraan@ast.uct.ac.za	HI-surveys with MeerKAT
Dr David Buckley	South African Astronomical Observatory	dibnob@sao.ac.za	MeerKAT and multi-wavelength (e.g. including SALT and X-ray satellite) observations of transitional millisecond pulsars.
Professor Patrick Woudt	University of Cape Town	pwoudt@ast.uct.ac.za	Radio transients with MeerKAT
Professor Mario Santos	University of the Western Cape	mgrsantos@uwc.c.za	Cosmology with MeerKAT; Probing the Epoch of Reionization with HERA
Adjunct Associate Professor Shazrene S. Mohamed	University of Cape Town	shazrene@sao.ac.za	Stellar interactions and explosions with MeerKAT
Dr Michael Bietenholz	Hartebeesthoek Radio Astronomy Observatory	michael@Hartrao.ac.za	Supernova and other transient, supernova remnant research with radio telescopes

4 CONDITIONS OF AWARD OF A POSTDOCTORAL FELLOWSHIP

- 4.1 Post-doctoral fellows are required to submit proof of employment at the relevant South African university, to SARAQ. No funds for a postdoctoral fellowship will be released until SARAQ has received the proof of employment.
- 4.2 On receipt of proof of employment, SARAQ will pay 100% of the postdoctoral fellowship to the university.
- 4.3 Post-doctoral fellows may not hold full-time salaried employment during this fellowship, but they are allowed to undertake a maximum of twelve hours of teaching, tutorials, assistance or demonstration duties per week, and they may be remunerated for their services, provided that they are reimbursed at the normal university rate for services rendered.
- 4.4 Post-doctoral fellows are allowed to hold supplementary grants or emoluments during this fellowship, to a maximum of 50% of the SARAQ award, but they must inform SARAQ via their university of such awards or emoluments.
- 4.5 All research papers published by SARAQ-funded post-doctoral fellows must acknowledge the financial assistance of SARAQ. "The financial assistance of the South African Radio Astronomy Observatory (SARAQ) towards this research is hereby acknowledged (www.ska.ac.za)"
- 4.6 Copies of papers and conference proceedings, published by SARAQ-funded post-doctoral fellows, must be provided to SARAQ.
- 4.7 Post-doctoral fellows are encouraged to attend the annual SARAQ Postgraduate Scholarship Conference, and to present their research at the conference.
- 4.8 If a post-doctoral fellow wishes to change their research project, or the university, for which the fellowship was awarded, they must provide a motivation to SARAQ for approval, prior to any changes. The SARAQ

is under no obligation to continue support if the changes do not comply with the criteria on which the fellowship offer was based.

- 4.9 If a post-doctoral fellow completes their research before the end of the period for which the fellowship was awarded, the fellowship will be decreased on a pro rata basis depending on the month in which the fellowship-holder completes their research.
- 4.10 An annual travel grant is available to support travel related to a post-doctoral fellow's research.
- 4.11 The grant includes subsistence and accommodation.
- 4.12 An application for travel must be submitted to the SARAO, via the university research office, at least two months before any trip is to be undertaken. Travel grant applications must be endorsed by the relevant professor / host.
- 4.13 The approval of a travel grant application is at the sole discretion of the SARAO.
- 4.14 Unspent funds from travel grants will automatically be carried over from one year to the next, for the duration of the postdoctoral fellowship.
- 4.15 An equipment grant is available to support the purchase of equipment required to enable a post-doctoral fellow to do their research, and is a total amount for the three years of the fellowship.
- 4.16 An application to purchase any item of equipment using this grant must be submitted to the SARAO, via the university research office. The approval of an equipment grant application is at the sole discretion of the SARAO.
- 4.17 Unless circumstances are motivated as exceptional, SARAO will NOT approve funding to purchase books, cellular phones, media players, E-readers, printers, digital projectors, iPads or other tablets.
- 4.18 Unspent funds from equipment grants will automatically be carried over from one year to the next, for the duration of the postdoctoral fellowship.

5 HOW TO APPLY FOR A SARAO POSTDOCTORAL FELLOWSHIP

- 5.1 Application forms are available at <https://skagrants.nrf.ac.za>
- 5.2 Please note that successful applicants will be notified by 22 November 2019. If you have not heard from SARAO by 22 November 2019, please assume that your application was NOT successful.

6 SARAO CONTACT INFORMATION

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

Dr Mthuthuzeli Zamxaka

Email: mzamxaka@ska.ac.za

Telephone: +27 11 442 2434

