Postdoctoral Fellowship in the High Energy Physics, Cosmology & Astrophysics Theory (HEPCAT) group at the University of Cape Town (UCT)

The High Energy Physics, Cosmology & Astrophysics Theory (HEPCAT) group in the Department of Mathematics and Applied Mathematics at the University of Cape Town (UCT) invites applications for a postdoctoral fellowship starting in 2023. The HEPCAT group was established around the South African Research Chair in Physical Cosmology held by Amanda Weltman. Group members conduct research on a wide range of theoretical physics, cosmology and astrophysics problems, with a particular focus on connecting observation and theory.

For more information on the activities of the HEPCAT group, see http://hepcat.group/. Our faculty members include Shajid Haque, Jeff Murugan, Jonathan Shock and Amanda Weltman, and most recently Marisa Geyer, a pulsar scientist and active member of the MeerKAT Large Survey Projects (LSPs) MeerTime and TRAPUM, that conduct a wide range of projects in pulsar timing and pulsar and radio transient searching. For more information on her work, please see www.marisageyer.co.za, and find additional information on the LSP projects at www.meertime.org and www.trapum.org respectively.

With this position, HEPCAT is seeking to expand its involvement in conducting radio pulsar and fast transient research both observationally and through its theoretical applications including conducting tests of Gravity in relativistic binaries; contributing to the searches for nano-Hz Gravitational Waves through high precision pulsar timing analysis and modelling radio transient propagation effects and studying its implications, in the case of Fast Radio Bursts, on Cosmological models. Applicants must have a track record of accomplishment and independence in their research.

There will also be opportunities to join external collaborations, including the pulsar and transient programmes running on MeerKAT (Meertime, TRAPUM and MeerTRAP), the HIRAX experiment, the MeerKAT extension project (MK+) as well as SKAO working groups. There will be additional opportunities to perform joint work across all group research areas, including astrophysics, gravity, cosmology and machine learning more broadly.

The appointment must comply with the University's approved policies, procedures and practices for the postdoctoral sector, and is subject to the rules and approval of the University of Cape Town and the National Research Foundation of South Africa.

The appointment is for two years at the outset, with a possible extension of one year subject to satisfactory progress and availability of funding. A PhD in Astrophysics, Astronomy, Physics or Applied Mathematics is required. Postdoctoral experience is a bonus, however the candidate needs to be within 5 years from the date of PhD at the start of the position and may not have held a full-time permanent academic or professional post.

Cape Town is an extremely beautiful city, surrounded by natural beauty. With beaches, mountains and forests only a short way from the city centre, Cape Town offers a perfectly balanced lifestyle. The city offers a wonderfully cosmopolitan atmosphere at a relatively low cost of living. The postdoc funding level is R400 000 per annum, tax free. Additional support is available for equipment and travel funding as appropriate.

Interested candidates should send a CV, a research proposal (2-3 pages), and arrange for three letters of recommendation to be sent to melissa.largier@uct.ac.za. Please use the following format in the subject line: YOURNAME, Postdoc 2023. The submission deadline is 24 February 2023. Screening of candidates will start thereafter and will continue until the position is filled. Any queries can be sent to Melissa at melissa.largier@uct.ac.za.

The University of Cape Town reserves the right to:

- *disqualify ineligible, incomplete and/or inappropriate applications*
- *change the conditions of award or to make no awards at all*