

SKA ORGANISATION
Job Particulars
Specialist Engineer
Application deadline: 31st January 2016

Competitive Salary and Flexible Benefits

Job Title: Specialist Engineer: Radio Interferometry

Reference: SERI/01

Reports To: Project Engineer

Closing Date for applications: Closing date for receipt of completed applications is 31st January 2016. For details of how to apply please see below.

Submission of applications: Email to jobs@skatelescope.org

Organisation Background

The Square Kilometre Array (SKA) is a global project to build a multi-purpose radio telescope that will play a major role in answering key questions in modern astrophysics and cosmology. It will be one of a small number of cornerstone observatories around the world that will provide astrophysicists and cosmologists with a transformational view of the Universe. The SKA will be constructed in two distinct phases. Among major science goals for the first phase, SKA1, will be to study the history and role of neutral Hydrogen in the Universe from the dark ages to the present-day, and to employ pulsars as probes of fundamental physics.

Since 2008, the global radio astronomy community has been engaged in the development of the SKA as a major part of the 'Preparatory' phase of the project. The Preparatory phase ended in December 2011 and, following a number of major changes, the international SKA project is now part way through the 'Pre-Construction' phase. Ten governments are now participating in the project, with others engaged in discussions concerning possible membership. The SKA Organisation is permanently headquartered in a purpose-built building at Jodrell Bank Observatory in Cheshire, UK.

General Description

The Office of the SKA Organisation ("SKA Office") leads the SKA system design and oversees the detailed design being undertaken by globally distributed SKA Consortia. To accomplish this goal the SKA Office employs highly qualified scientists and specialised engineers, project managers and system engineers. Design work packages for the major SKA subsystems have been contracted to a small number of work package consortia who are responsible for the management, execution and delivery of the work packages.

The SKA-mid telescope will consist of an 2-dimensional array of about 130 "dishes", spread over an area about 150 km in diameter. Each dish will consist of a large steerable reflector antenna, multiple front-end and digital receiver packages, and monitor/control components. These are sophisticated designs, optimised for good price to telescope-system performance. The performance of dishes over frequencies from 350 MHz to more than 20 GHz will dominate the performance of the entire telescope. The overall design of the antennas has been defined: 15-m equivalent diameter, offset Gregorian reflectors with room for at least 4 cyro-cooled front-ends and one uncooled front-end at low frequencies.

The Role

Specialist Engineers have extensive experience in a particular field of interest to the SKA, providing specialist support where-ever it is needed. For this position we are seeking an experienced generalist in radio-astronomy interferometry systems.

Key Duties, Accountabilities and Responsibilities

Under the direction of the SKA Project Engineer the postholder will:

- Provide leadership in their area of domain expertise.
- Assist in the generation of the top-level requirements and design.
- Provide engineering performance analysis as required.
- Provide updates and reports as necessary.
- Work with Work Package Consortia (WPC) or equivalent, as appropriate to provide guidance, advice and technical assistance in their domain area of expertise.
- As required, engage in WPC and other reviews in their areas of expertise, or if required, in other areas.
- Participate in team projects, and to provide specialist assistance to working groups, colleagues and WPCs.
- Travel, as required, to any of the SKA countries.
- As required, provide advice and guidance to SKA Office Project Managers and System Engineers.
- Undertake training in the financial, occupational health and safety, and human resource management procedures applicable to the SKA or its partners.
- Undertake any other reasonable duties as directed by the post holder's line manager or a member of SKA Organisation Senior Management Team.

Mandatory Qualifications, Experience and Knowledge:

- Recognised university degree-level education/training in engineering or physical sciences.
- If required or relevant, maintain or obtain status as a professional or chartered engineer.
- Analytical skills. Experience with analysis/simulation, design tools and programming languages.
- Experience with design in the relevant field of specialty.
- Good English oral and written communication skills.
- Experience in presenting work orally at meetings and other forums.
- Specialist knowledge and experience in a solid subset of the following, and working knowledge of the others, unless otherwise specified:
 - Working knowledge of radio astronomy interferometry.
 - Experience with radio astronomy systems, performance analysis, and calibration techniques.
 - Working knowledge with the techniques of time synchronisation at a distance and with radio astronomy applications of such.
- Ability to work effectively with SKA engineers and scientists from a variety of cultures, and
- Willingness to travel, nationally and internationally, and work outside normal business hours, including evenings and weekends;

Desirable Qualifications, Experience and Knowledge:

- Expert knowledge and experience with radio astronomy interferometry and performance analysis and calibration techniques.
- Familiarity with radio astronomy or a closely allied field.
- Industry experience, and/or a track record in successful collaborative links with industry.
- Familiarity with the formalism for, and requirements of, quality control environments such as ISO9000.
- Familiarity with optical link design.

RevB

- Familiarity with time/frequency instrumentation and time-transfer.
- Working knowledge of the theory of optical data transmission

For more information on the SKA project visit <http://www.skatelescope.org>. The SKA Organisation offers a competitive salary, a generous company pension scheme and a flexible benefits package. The successful applicant's workplace will be located at SKA Organisation's new headquarters in Jodrell Bank Observatory.

How to apply:

Please send a CV and covering letter to jobs@skatelescope.org, quoting reference SERI/01. Applications should include a summary of scientific accomplishments, project experience a resume, details of your current remuneration and the names of at least three professional references. Closing date for receipt of applications is 31st January 2016.

Equal Opportunities Statement:

SKA Organisation is committed to being an equal opportunities employer. Our aim is to recruit and retain the most talented individuals, regardless of gender, race, disability, age, sexual orientation, religion or nationality.

At all stages of the recruitment process and beyond, we strive to treat applicants and employees with a high standard of care, honesty and politeness.

Women have traditionally been under-represented in the fields of science and engineering; SKA Organisation welcomes and encourages female applicants.

Where applicants with a disability need facilities or adjustments to enable them to participate in the recruitment process, these will be provided. If you need equipment or adjustments to enable you to complete your application and/or attend an interview then please let us know.