# Position Details

## Research Projects – CSOF4

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| The following information is for applicants | |
| Advertised Job Title | Telescope Operator / Data Analyst – SKA-Low Telescope |
| Job Reference | 88541 |
| Tenure | * Indefinite * Full-time, Part-time, or Job-share |
| Salary Range | AU$87068k - AU$98504k per annum (pro-rata for part-time)  Plus up to 15.4% superannuation |
| Location(s) | Perth, Western Australia |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian/New Zealand Citizens and Australian Permanent Residents * All Candidates |
| Position reports to the | SKA-Low Head of Science Operations |
| Number of Direct Reports | 0 |
| Enquire about this job | Jimi.Green@SKAO.int |
| How to apply | Apply online at <https://jobs.csiro.au/>  Internal applicants please apply via **Jobs Central**  If you experience difficulties when applying, please email [careers.online@csiro.au](mailto:careers.online@csiro.au) or call 1300 984 220. |

**Acknowledgement of Country**

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

**The CSIRO Experience**

As an employee of CSIRO, you will be eligible for the many benefits of working at Australia’s National Science Agency. You can read more here:

1. [Life at CSIRO](https://www.csiro.au/en/careers/life-at-csiro)
2. [Personal Development & Learning](https://www.csiro.au/en/careers/life-at-csiro/Career-development)
3. [Generous Leave & Conditions](https://www.csiro.au/en/careers/life-at-csiro/Generous-leave-conditions)
4. [Work / Life Balance](https://www.csiro.au/en/careers/life-at-csiro/Balance)

**Background**

The SKA Observatory (SKAO) is coordinating a global effort to build the largest science facility on the planet. This next-generation radio-astronomy observatory will transform our understanding of the Universe and deliver benefits to society through global collaboration and innovation.

SKAO is one observatory with two telescopes: SKA-Low in Western Australia and SKA-Mid in South Africa, with the global headquarters at Jodrell Bank, UK. The SKAO is an intergovernmental organisation composed of member states from four continents, with organisations from 16 countries in total currently participating in the project.

The SKAO’s science goals are broad and ambitious. Its telescopes will investigate the history of the Universe as far back as the Cosmic Dawn, when the very first stars and galaxies formed, to seek answers to some of the biggest questions in astronomy.

In Australia, SKAO is collaborating with CSIRO to operate the SKA-Low Telescope, which will be built at CSIRO’s Murchison Radio-astronomy Observatory (MRO), on Wajarri country. SKA-Low teams will operate out of our Engineering Operations Centre in Geraldton, on Yamaji country, and Science Operations Centre in Perth, on Noongar country.

The first phase of the SKA will consist of two telescopes:

* Australia will host the SKA’s low-frequency telescope (SKA1-Low). SKA-Low will comprise up to 131,072 antennas in clusters along spiral arms spanning 65 km at CSIRO’s Murchison Radio-astronomy Observatory (MRO) in Western Australia.
* South Africa will host the mid-frequency telescope (SKA-Mid). SKA-Mid will comprise up to 197 dishes spread along spiral arms spanning 150 km.
* Further Reading: [SKA Phase 1 Key. Documents.](https://www.skatelescope.org/key-documents/)

Both SKAO and CSIRO value and respect difference, and are committed to providing a safe and inclusive workplace culture by creating an environment where you can balance a successful career with your commitments and interests outside of work. We believe that you will do your best at work if you maintain a healthy work/life balance. We are open to discussing flexible working opportunities with this role being offered on a full‐time, part‐time or job share basis. Please indicate your preference in your application.

### Role Overview

SKA-Low telescope operators will be fundamental to delivering the broad and ambitious science from one of the world’s largest telescopes. These roles are a unique opportunity to join the science operations team at its onset. This role will evolve as the SKA-Low telescope is built:

* During the construction phase this role will be responsible for commissioning observations in collaboration with the Commissioning Team and the Assembly, Integration and Verification Team. Observing during this phase is expected to be outside of traditional working hours.
* Once construction is complete, the SKA-Low Operator / Data Analyst will be responsible for the day-to-day observing of the SKA-Low telescope and provide analysis of the initial telescope data for quality assurance and science verification. Observing during this phase is expected to be 24/7 with the team working shift patterns.

Telescope control and data analysis will be undertaken from the Science Operations Centre in Perth. In line with the SKAO commitment to become an employer of choice for women in STEM we strongly encourage applications from women for this role. We offer family friendly policies and the ability to work flexibly to support this aim.

Those applicants wishing to explore part time or job share working are openly encouraged to discuss their individual need for flexibility or specific working patterns during the recruitment process.

### Duties and Key Result Areas

* Conduct, monitor and calibrate astronomical observations and use appropriate computing resources towards successful operation of the telescope array releases (when they become available and as required).
* Assist with system checks, maintenance handovers, array and correlator/beamformer configurations and setups.
* Undertake quality assurance of (continuum and spectral line imaging) data obtained from early array releases using existing low frequency data sets, such as from the MWA.
* Contribute to the designing and documenting operating procedures for SKAO.
* Support communication between engineering and technical staff and scientific stakeholders.
* Work collaboratively with colleagues, both within the Science Operations Team and across the multi-disciplinary roles of the broader SKAO.
* Adhere to the values of CSIRO and SKAO and promote an inclusive workplace.

## **Selection Criteria**

#### Essential

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. Aptitude to control and operate a scientific research facility including familiarity with monitoring, controlling, and scheduling.
2. Appreciation of steps required for the acquisition and processing of scientific data.
3. Aptitude to contribute to the definition and development of operational procedures, monitoring dashboards and documentation.
4. Ability to work effectively as part of a multidisciplinary team.
5. An awareness of equitable practices, including accessibility, to facilitate broad access to the Observatory.

## **Desirable**

1. An undergraduate degree or equivalent in astronomy, physics, engineering, computing or a related field
2. Experience in radio astronomy observations and data reduction pipelines, especially at low frequencies.
3. Familiarity with low frequency radio astronomy calibration techniques.

**Diversity and inclusion**

We believe that innovation thrives on the diversity of thought, ideas, and lived experiences being brought to the table by all to solve Australia’s greatest challenges. We are an Equal Opportunity employer working hard to recruit world-class talent that represents the diversity across our society, empowering staff to bring their whole selves to work and supporting everyone to enable their ideas to flourish. We recognise that a candidate's capability to perform a role can be demonstrated in a variety of ways and encourage candidates to address the role criteria with this in mind.

## **Required Competencies**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.
* **Influence and Communication:** Uses knowledge of other party's priorities and adapts presentations or discussions to appeal to the interests and level of the audience. Anticipates and prepares for others reactions.
* **Resource Management/Leadership:** Allocates activities, directs tasks and manages resources to meet objectives. Provides coaching and on the job training, recognises and supports staff achievements and fosters open communication in the team.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate responses by adapting/creating and testing alternative solutions.
* **Independence:** Recognises and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).
* **Adaptability:** Copes with ambiguity or situations that lack clarity. Adapts readily to changing circumstances and new responsibilities (which may include activities outside own preferences) in the interests of achieving team objectives. Recognises the need for and undertakes personal development as a result of changes.

**Special Requirements**

Appointment to this role may be subject to conditions including provision of a national police check as well as other security/medical/character clearance requirements.

Include if relevant:

* The successful candidate will be asked to obtain and provide evidence of a National Police Clearance or equivalent. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* If the successful candidate is not an Australian Citizen or Permanent Resident, they may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test- https://ielts.com.au/)