



## Position Description

<b>College/Division:</b>	College of Science
<b>Faculty/School/Centre:</b>	Research School of Astronomy and Astrophysics
<b>Department/Unit:</b>	Advanced Instrumentation and Technology Centre (AITC)
<b>Position Title:</b>	Optical Specialist
<b>Classification:</b>	ANU Officer Grade 6/7 (Specialist)
<b>Position No:</b>	TBC
<b>Responsible to:</b>	Optical Discipline supervisor
<b>Number of positions that report to this role:</b>	
<b>Delegation(s) Assigned:</b>	

### PURPOSE STATEMENT:

The Research School of Astronomy and Astrophysics' (RSAA) research program requires a high-level engineering team to develop innovative state-of-the-art ground-based and space-based optical and infrared instrumentation and telescope systems, and to support existing telescope infrastructure at Siding Spring Observatory. The Optical Specialist is expected to undertake optical research and development activities within the optics discipline team environment and provide specialist technical support to RSAA research program in the area of Optics. The Optical Specialist will maintain an up-to-date knowledge and awareness of the state-of-the-art practice and technology in the field.

### KEY ACCOUNTABILITY AREAS:

#### Position Dimension & Relationships:

The Optical Specialist reports to the Optical Discipline supervisor of the RSAA Advanced Instrumentation Technology Centre (AITC), providing design, development, validation, assembly, verification, and maintenance expertise for AITC technical projects and activities. A close working relationship is required with the ANU staff along with external partners and stakeholders. The Optical Specialist will follow AITC technical management procedures to ensure optimum results for complex, multi-disciplinary instrumentation projects, often within the framework of international consortia. The Optical Specialist in this role is responsible for ensuring that the necessary optics standards and technical facilities requirements are met for assigned projects.

#### Role Statement:

Under the broad direction of the Optical Discipline supervisor the Optical Specialist will:

- Manage complex optical assignments relating to astronomical systems from concept through to implementation, entailing technical specifications, design, modelling, alignment, testing, detailed planning, and delivery of support documentation.
- Operate and maintain high end optical/metrological test equipment under supervision of the Optics Discipline supervisor.
- Contribute to the development of budgets and schedules for assigned project tasks and work closely with teams to manage and oversee optical system budgets to mitigate risks and ensure that optical systems are delivered in a cost-effective manner within schedule while meeting technical requirements.
- Define optical specifications for drawings, optical materials, opto-mechanical constraints, and testing.
- Provide input for optical project proposals, providing expert advice and assessment on technical feasibility.
- Provide expert optical advice to projects, facilitate interdisciplinary design solutions.
- Develop technical documentation and input to articles for general publication.
- Maintain a working knowledge both of best-practice procedures in the context of prototype, one-off and small batch constructions, and an awareness of relevant state-of-the-art practice and technologies

that might be applied to astronomical or space research within the context of AITC operational constraints.

- Comply with, maintain an awareness of and help promote all ANU policies and procedures; in particular those relating to work health and safety and equal opportunity and diversity.
- Perform other duties as requested, consistent with the classification level of the position and in line with the practice of multi-skilling.

### SELECTION CRITERIA:

- A University degree qualification in Optics or related discipline with a minimum of two years relevant optics development experience. Professional experience in the context of astronomical or space/physics research will be highly regarded, as would experience with complex optical systems operating in vacuum at cryogenic temperatures, but neither is a requirement.
- Proven experience in optical systems of complex instruments covering; requirements development, optical design with tolerancing, and direct involvement with prototyping, manufacture, assembly, testing, commissioning, maintenance, and troubleshooting of systems. Preferably in the context of optical, space, or astronomical instrumentation and research.
- Experience with optical design software as well as optical materials, properties, and coatings.
- Experience of optical and electro-optical system performance and analysis modelling including imaging and radiometric/photometric properties.
- Familiarity with the application and use of metrology equipment including: optical alignment equipment (e.g. alignment telescopes), interferometers, spectrometers, image analysis (MTF) tools, and radiometers.
- Proven high level of written communication skills with the ability to develop and contribute to material for publication in technical literature.
- A demonstrated high level of understanding of equal opportunity (EO) and diversity best practice and a commitment to the application of EO policies in a university context.

*ANU Officer Levels 6 and 7 are broad banded in this stream. It is expected that at the higher levels within the broadband occupants, through experience, will have developed skills and expertise enabling them to more independently perform the full range of duties at a higher level, and that more time will be spent on the more complex functions of the position.*

*The ANU conducts background checks on potential employees, and employment in this position is conditional on satisfactory results in accordance with the Background Checking Procedure which sets out the types of checks required by each type of position.*

**Supervisor/Delegate Name:**

Dr Israel Vaughn

**Date:**

February 2023

### References:

[General Staff Classification Descriptors](#)

[Academic Minimum Standards](#)



Australian  
National  
University

# Pre-Employment Work Environment Report

## Position Details

College/Div/Centre	College of Science	Dept/School/Section	RSAA, AITC
Position Title	Optical Specialist	Classification	ANU Officer Level 6/7 (Specialist)
Position No.		Reference No.	

In accordance with the Work Health and Safety Act 2011 (Cth) the University has a primary duty of care, so far as reasonably practicable, to ensure the health and safety of all staff while they are at work in the University.

- This form must be completed by the supervisor of the advertised position and appended to the back of the Position Description.
- This form is used to advise potential applicants of work environment and health and safety hazards prior to application.
- Once an applicant has been selected for the position they must familiarise themselves with the University WHS Management System via Handbook guidance <https://services.anu.edu.au/human-resources/health-safety/whs-management-system-handbook>
- The hazards identified below are of generic nature in relation to the position. It is not correlated directly to training required for the specific staff to be engaged. Identification of individual WHS training needs must be in accordance with WHS Local Training Plan and through the WHS induction programs and Performance Development Review Process.
- 'Regular' hazards identified below must be listed as 'Essential' in the Selection Criteria - see 'Employment Medical Procedures' at [http://info.anu.edu.au/Policies/\\_DHR/Procedures/Employment\\_Medical\\_Procedures.asp](http://info.anu.edu.au/Policies/_DHR/Procedures/Employment_Medical_Procedures.asp)

## Potential Hazards

<ul style="list-style-type: none"> <li>• Please indicate whether the duties associated with appointment will result in exposure to any of the following potential hazards, either as a <b>regular</b> or <b>occasional</b> part of the duties.</li> </ul>					
TASK	regular	occasional	TASK	regular	occasional
key boarding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	laboratory work	<input type="checkbox"/>	<input checked="" type="checkbox"/>
lifting, manual handling	<input type="checkbox"/>	<input checked="" type="checkbox"/>	work at heights	<input type="checkbox"/>	<input type="checkbox"/>
repetitive manual tasks	<input type="checkbox"/>	<input type="checkbox"/>	work in confined spaces	<input type="checkbox"/>	<input type="checkbox"/>
Organizing events	<input type="checkbox"/>	<input type="checkbox"/>	noise / vibration	<input type="checkbox"/>	<input type="checkbox"/>
fieldwork & travel	<input type="checkbox"/>	<input type="checkbox"/>	electricity	<input type="checkbox"/>	<input type="checkbox"/>
driving a vehicle	<input type="checkbox"/>	<input type="checkbox"/>			
<b>NON-IONIZING RADIATION</b>			<b>IONIZING RADIATION</b>		
solar	<input type="checkbox"/>	<input type="checkbox"/>	gamma, x-rays	<input type="checkbox"/>	<input type="checkbox"/>
ultraviolet	<input type="checkbox"/>	<input type="checkbox"/>	beta particles	<input type="checkbox"/>	<input type="checkbox"/>
infra red	<input type="checkbox"/>	<input type="checkbox"/>	nuclear particles	<input type="checkbox"/>	<input type="checkbox"/>
laser	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
radio frequency	<input type="checkbox"/>	<input type="checkbox"/>			
<b>CHEMICALS</b>			<b>BIOLOGICAL MATERIALS</b>		
hazardous substances	<input type="checkbox"/>	<input checked="" type="checkbox"/>	microbiological materials	<input type="checkbox"/>	<input type="checkbox"/>
allergens	<input type="checkbox"/>	<input type="checkbox"/>	potential biological allergens	<input type="checkbox"/>	<input type="checkbox"/>
cytotoxics	<input type="checkbox"/>	<input type="checkbox"/>	laboratory animals or insects	<input type="checkbox"/>	<input type="checkbox"/>
mutagens/teratogens/ carcinogens	<input type="checkbox"/>	<input type="checkbox"/>	clinical specimens, including blood	<input type="checkbox"/>	<input type="checkbox"/>
pesticides / herbicides	<input type="checkbox"/>	<input type="checkbox"/>	genetically-manipulated specimens	<input type="checkbox"/>	<input type="checkbox"/>
			immunisations	<input type="checkbox"/>	<input type="checkbox"/>
<b>OTHER POTENTIAL HAZARDS (please specify):</b>					
Supervisor/Delegate Name:		Dr Israel Vaughn		Date:	February 2023



**Australian  
National  
University**

## Position Description

<b>College/Division:</b>	College of Science
<b>Faculty/School/Centre:</b>	Research School of Astronomy and Astrophysics
<b>Department/Unit:</b>	Advanced Instrumentation and Technology Centre (AITC)
<b>Position Title:</b>	Senior Optical Specialist
<b>Classification:</b>	ANU Officer Grade 8 (Specialist)
<b>Position No:</b>	TBC
<b>Responsible to:</b>	Optical Discipline Supervisor
<b>Number of positions that report to this role:</b>	
<b>Delegation(s) Assigned:</b>	

### PURPOSE STATEMENT:

The Research School of Astronomy and Astrophysics' (RSAA) research program requires a high-level engineering team to develop innovative state-of-the-art ground-based and space-based optical and infrared instrumentation and telescope systems, and to support existing telescope infrastructure at Siding Spring Observatory. The Senior Optical Specialist is expected to undertake optical research and development activities within the optics discipline team environment and provide specialist technical support of the RSAA research program in the area of Optics. The Senior Optical Specialist will maintain an up-to-date knowledge and awareness of the state-of-the-art practice and technology in the field.

### KEY ACCOUNTABILITY AREAS:

#### Position Dimension & Relationships:

The Senior Optical Specialist reports to the Optical Discipline supervisor of the RSAA Advanced Instrumentation Technology Centre (AITC), providing design, development, validation, assembly, verification, and maintenance expertise for approved AITC technical projects and activities. A close working relationship is required with the ANU staff along with external partners and stakeholders. The Senior Optical Specialist will follow AITC technical management procedures to ensure optimum results for complex, multi-disciplinary instrumentation projects, often within the framework of international consortia. The Senior Optical Specialist in this role is responsible for managing and ensuring that necessary optics standards and technical facilities requirements are met for assigned projects. This position will involve mentoring and development opportunities.

#### Role Statement:

Under the broad direction of the Optical Discipline supervisor and working with a considerable degree of autonomy the Senior Optical Specialist will:

- Manage complex optical assignments relating to space and astronomical systems from concept through to implementation, entailing technical specifications, design, modelling, alignment, testing, detailed planning and delivery of support documentation.
- Operate and maintain high end optical/metrological test equipment.
- Facilitate building required optical metrology capability under the supervision of the Optical Discipline supervisor.
- Develop budgets and schedules for assigned project tasks within the requirements of contracts, and work closely with teams to manage and oversee optical system budgets to mitigate risks and ensure that optical systems are delivered in a cost-effective manner within schedule while meeting technical requirements.
- Define optical specifications for drawings, optical materials, opto-mechanical constraints, and testing.
- Provide critical contributions to optical project proposals, providing expert advice and assessment on feasibility, cost, resource implications and test needs.
- Participate in and specify commissioning, enhancement, and optimising of optical systems and identifying new opportunities.

- Provide expert optical advice to projects, facilitate interdisciplinary design solutions.
- Develop technical documentation and descriptive articles for general publication.
- Maintain a working knowledge both of best-practice procedures in the context of prototype, one-off and small batch constructions, and an awareness of relevant state-of-the-art technologies that might be applied to astronomical or space research within the context of AITC e operational management procedures.
- Comply with, maintain an awareness of and help promote all ANU policies and procedures; in particular those relating to work health and safety and equal opportunity.
- Perform other duties as requested, consistent with the classification level of the position and in line with the practice of multi-skilling.

### SELECTION CRITERIA:

- Progress towards postgraduate qualifications in Optics or a related discipline with a minimum of four years relevant optics experience. Professional experience in the context of astronomical or space/physics research will be highly regarded, as would experience with complex optical systems operating in vacuum or space environments at cryogenic temperatures, but neither is a requirement. PhD qualifications in field of Optics will be highly regarded.
- Proven experience in optical systems of complex instruments covering; requirements development, optical design with tolerancing, and direct involvement with prototyping, manufacture, assembly, testing, commissioning, maintenance, and troubleshooting of systems. Preferably in the context of optical, space, or astronomical instrumentation and research.
- Experience in the management of optical systems design, manufacturing, integration, testing, and delivery.
- Experience with optical design software as well as optical materials, properties, and coatings.
- Experience of optical and electro-optical system performance and analysis modelling including imaging and radiometric/photometric properties.
- Familiarity with the application and use of metrology equipment including: optical alignment equipment (e.g. alignment telescopes), interferometers, spectrometers, image analysis (MTF) and radiometers.
- Proven high level of written communication skills with the ability to develop and contribute to material for publication in technical literature.
- A demonstrated high level of understanding of equal opportunity (EO) and diversity best practice and a commitment to the application of EO and diversity policies in a university context.

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<b>Supervisor/Delegate Name:</b>	Dr Israel Vaughn	<b>Date:</b>	February 2023
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# Pre-Employment Work Environment Report

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infra red	<input type="checkbox"/>	<input type="checkbox"/>	nuclear particles	<input type="checkbox"/>	<input type="checkbox"/>
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pesticides / herbicides	<input type="checkbox"/>	<input type="checkbox"/>	genetically-manipulated specimens	<input type="checkbox"/>	<input type="checkbox"/>
			immunisations	<input type="checkbox"/>	<input type="checkbox"/>
<b>OTHER POTENTIAL HAZARDS (please specify):</b>					
<b>Supervisor/Delegate Name:</b>		Dr Israel Vaughn		<b>Date:</b>	February 2023