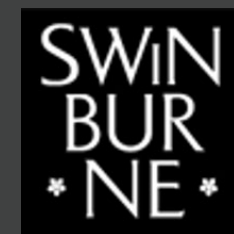


# Australian Updates for IPPOG

Jackie Bondell – Senior Education and Outreach Manager

@ARC\_DMPP

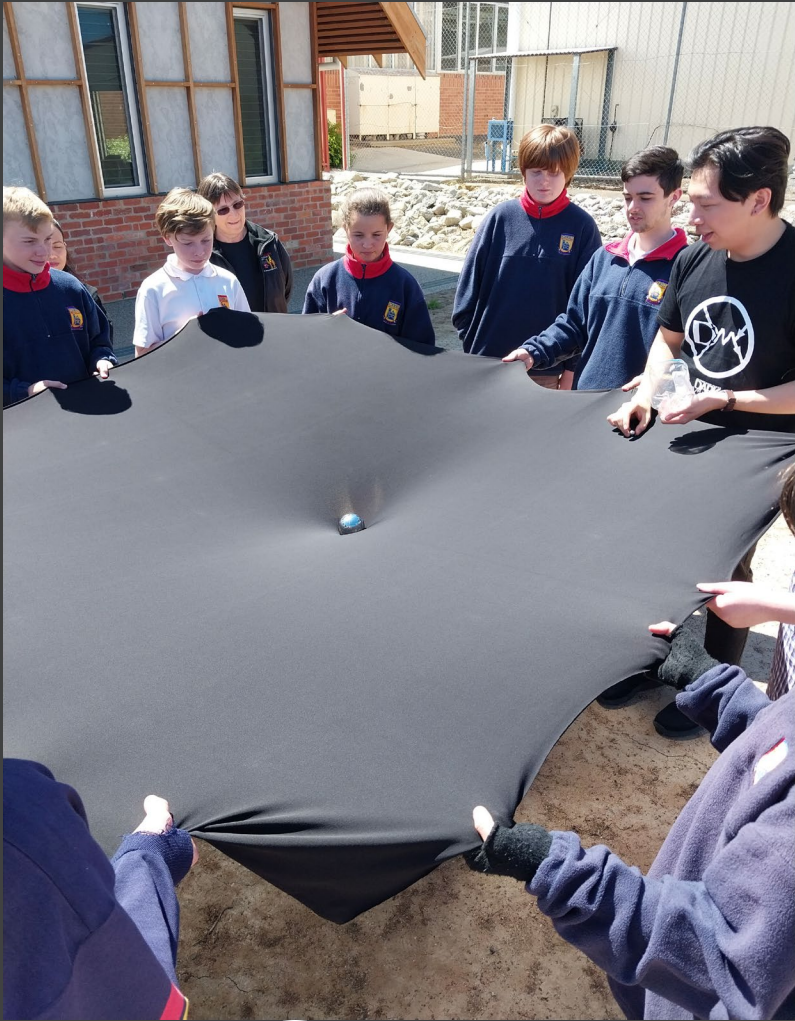
IPPOG Spring Meeting - Madrid



# Outreach Updates: What we did this year...

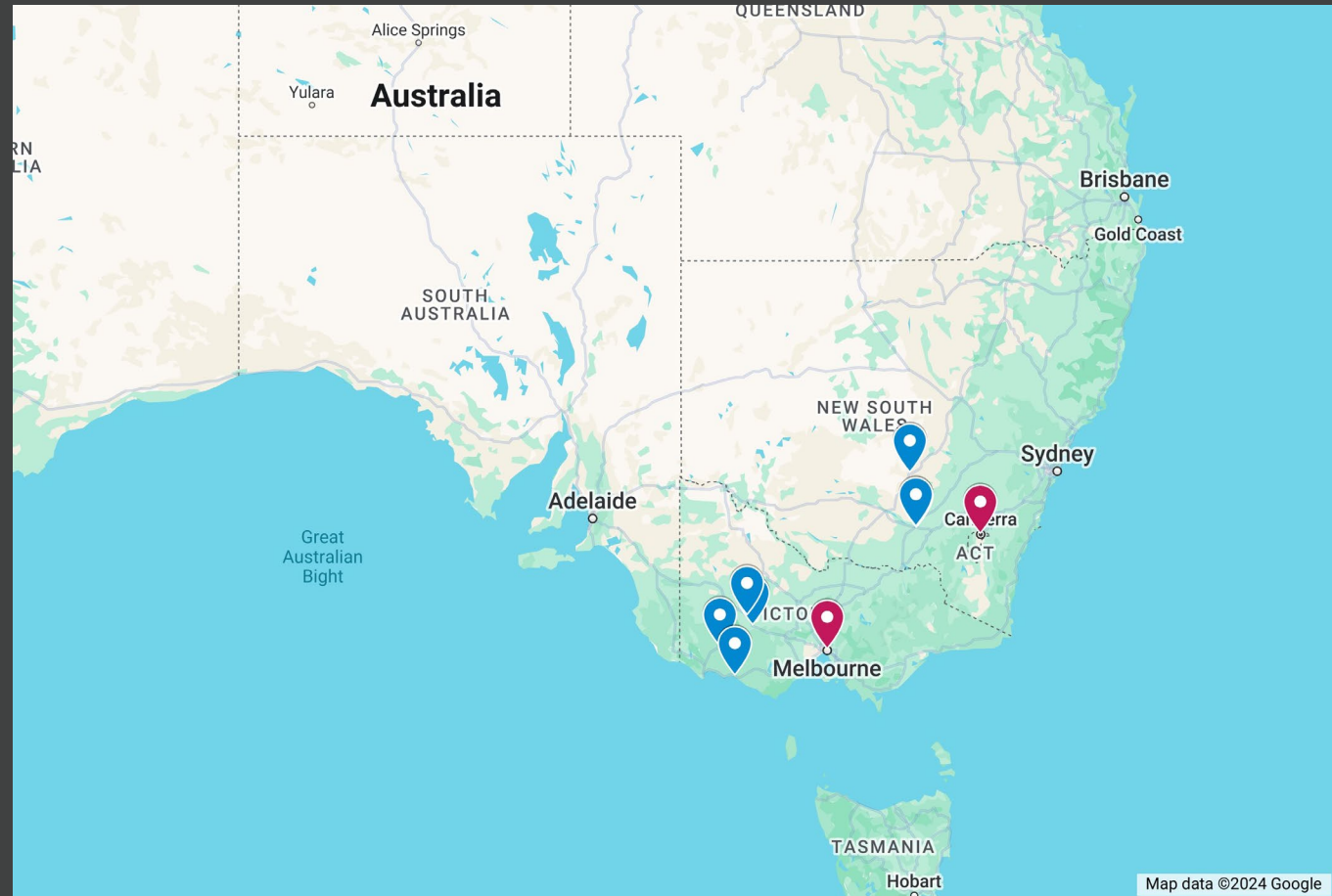
# Dark Matter Partner Schools

# Dark Matter Partner Schools

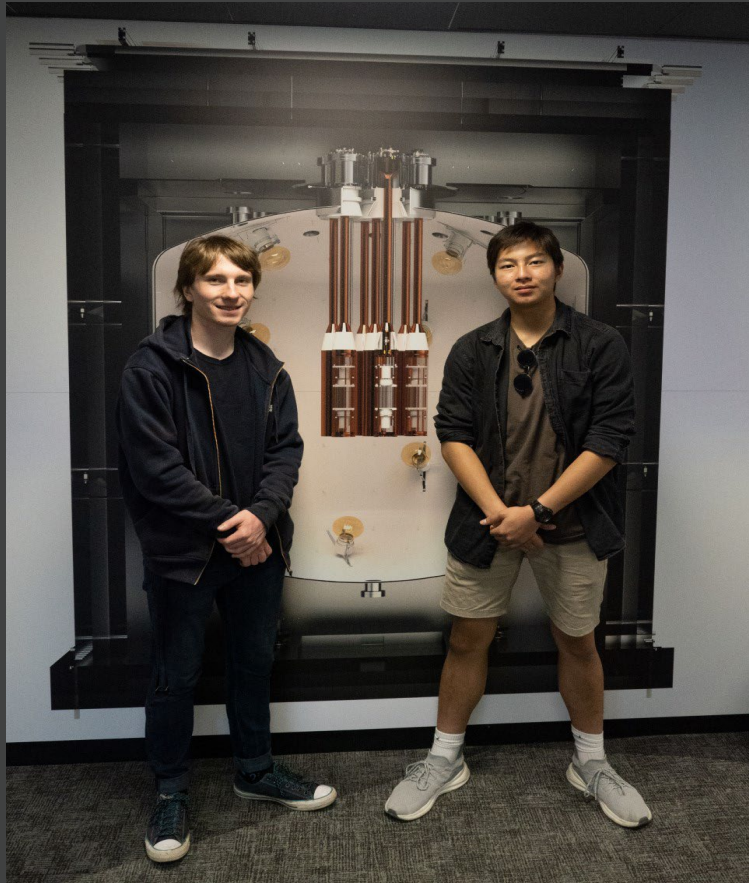


- Sessions with ~350 Year 7 students at our VIC Partner Schools
- Additional sessions with all Year 8 and 9 students at specific schools
- Additional sessions with all Year 11 and 12 Physics students at the VIC partner schools
- Melbourne Graduate School of Education collected first data for analysis
- Opportunities for ECRs to engage with students

# Dark Matter Partner Schools



# Dark Matter Partner Schools



- Extended Investigation Project
- Creating opportunities for research experiences for rural students
  - Mentored by CDM PhD students and postdocs



# Teacher and Student Programs



- Multiple regional and national STEM workshops for teachers and students
- Targeted Dark Matter workshops for teachers
- Article for SA Science Teachers Association on incorporating DM topics into the curriculum

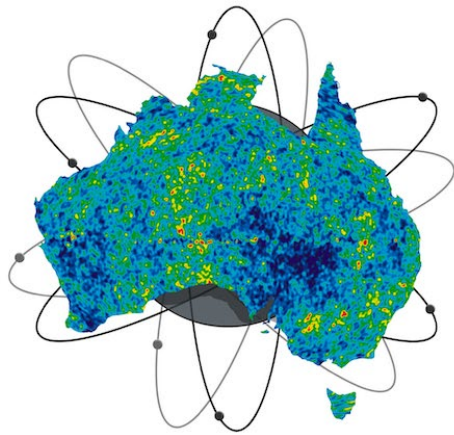
# Teacher and Student Programs





# Quantum and Dark Matter Road Trip

# Quantum and Dark Matter Road Trip



## **NATIONAL** Quantum & Dark Matter **ROAD TRIP**

- 18 schools and 12 public events
- 1600+ people engaged
- Regional and remote NSW, QLD, and VIC
- Lectures in metro cities
- 4750 km

# Quantum and Dark Matter Road Trip

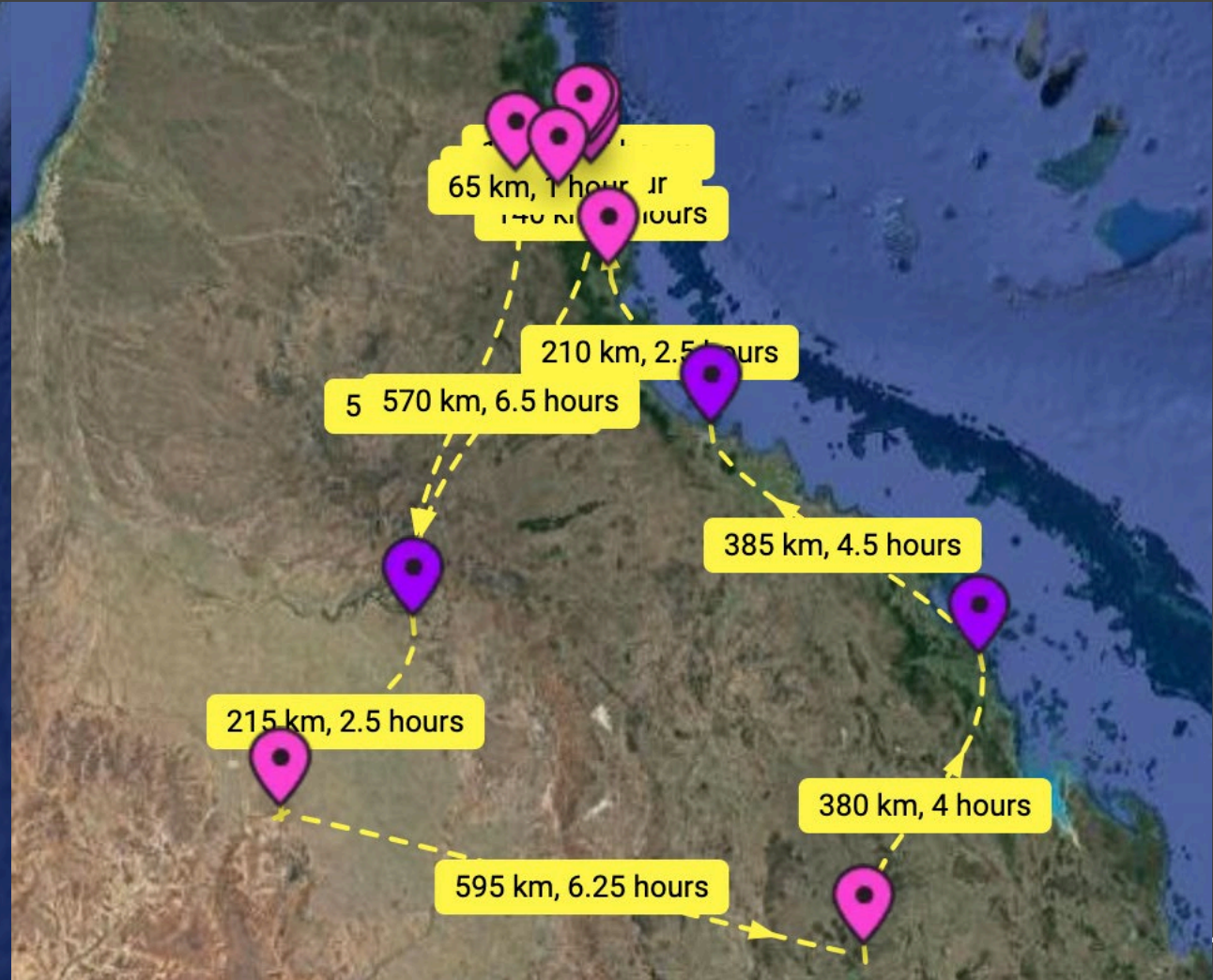
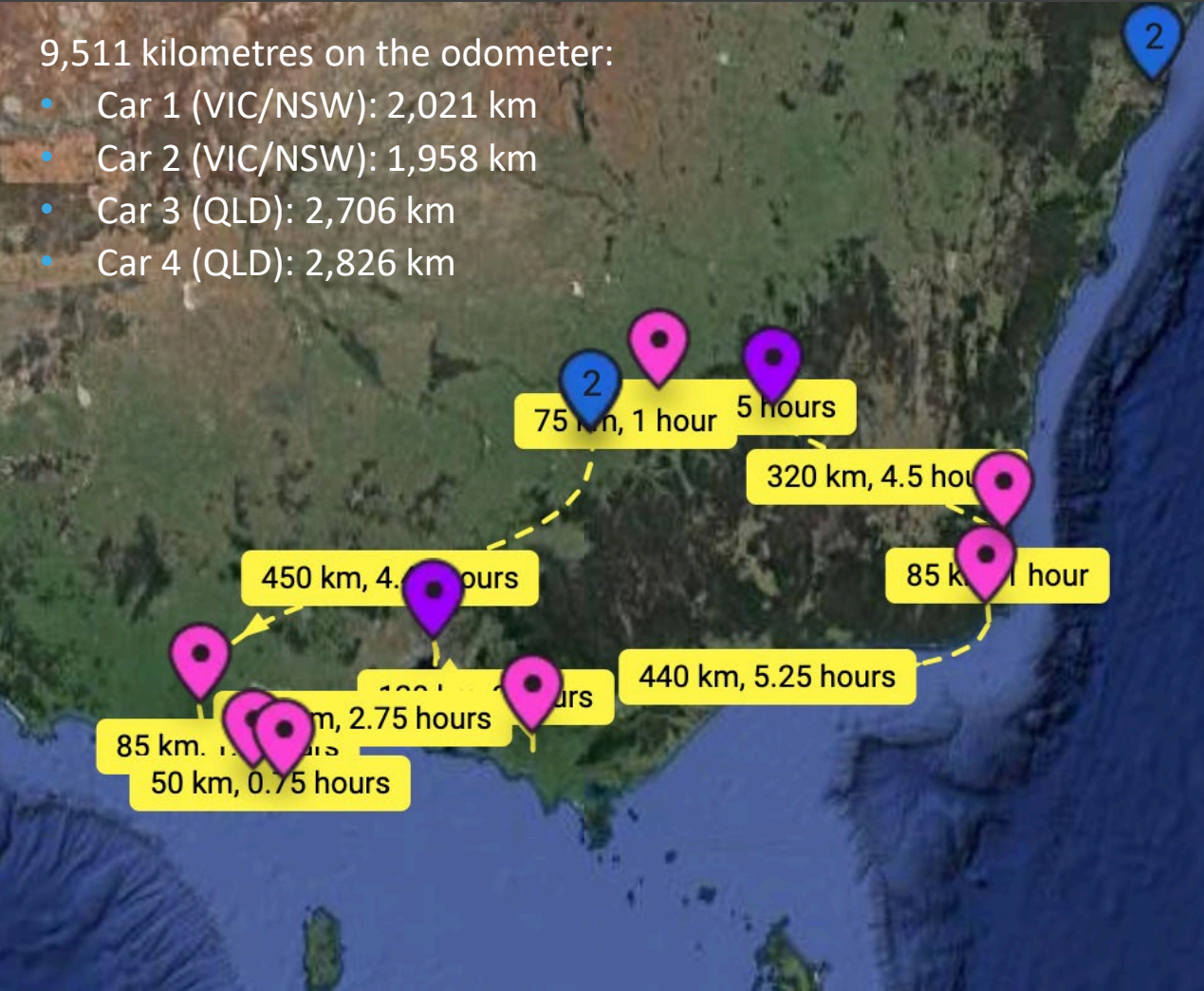




# 4,750 kilometres, 24+ cities & towns

9,511 kilometres on the odometer:

- Car 1 (VIC/NSW): 2,021 km
- Car 2 (VIC/NSW): 1,958 km
- Car 3 (QLD): 2,706 km
- Car 4 (QLD): 2,826 km





# 1,600+ people engaged

- 900 school students
- 160 pub-goers
- 420 public talk or lecture attendees
- 120 attendees at other public events



# 2,400+ items of merch

- 1,600 stickers
- 220 bags of jelly beans
- 64 fridge magnets
- 16 seed packets
- 500 EQUS/CDM merch
- 4 (smaller) car magnets
- 36 t-shirts
- 10 hoodies
- 10 luggage tags





# Lots of memories!



# Outreach Updates: Media and Comms



# Our 2023 campaigns – highlighting women in science

## CAREER DEVELOPMENT

### Female Scientists no Longer in the Shadows

Scientist travelling around Australia to show girls the real face of science.

EMILY FILMER, ARC CENTRE OF EXCELLENCE FOR DARK MATTER PARTICLE PHYSICS MEMBER  
AUG 22, 2023



The face of science is changing.

I was three years old when I told my parents I wanted to be a physicist. Growing up in a household full of science and engineering - my mother a GP and my father an engineer - my passion was encouraged and nurtured.



Politics Immigration Indigenous Environment Life

### This Australian scientist is pushing for more girls to aspire to work in physics

The new president of the Australian Institute of Physics, Nicole Bell, says a whole-of-society effort is needed to see more women in science, including in the field of physics - and the efforts need to be directed at young girls.



Australian Institute of Physics President Nicole Bell says it will take sustained effort to ensure there are more women in the field of physics in the next 20 years. Source: AAP / Matt Turner

#### KEY POINTS

- The International Day of Women and Girls in Science is being observed on 11 February.
- The new president of the Australian Institute of Physics says females remain under-represented in physics.
- The government is undertaking a review on how to improve the pathways for females to work in the sciences.

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# National Quantum & Dark Matter Road Trip

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Courtesy of the National Quantum and Dark Matter Road Trip visited Winton on Thursday, 24 August. Pictures: Contributor

by Khrysti Balanay



As part of the National Quantum and Dark Matter Road Trip, dark matter scientists from universities across Australia visited Winton on Thursday, 24 August, inspiring the next generation of scientists.

The road trip was organised by the ARC Centre of Excellence for Dark Matter Particle Physics (CDM) and the ARC Centre of Excellence for Engineered Quantum Systems (EQUS), which have bases in many of Australia's capital cities.


Road trip organiser and physicist Dr Ben McAllister, from CDM and EQUS, said the event aimed to provide rural and regional students access to cutting-edge science.

"The National Quantum and Dark Matter Road Trip brings the excitement of science to students who live outside capital cities," Dr McAllister said.

"During our sessions, we introduced secondary school students to the mystery of dark matter and the impact of quantum technologies.

"We hoped that by visiting these schools in northern Queensland, we can show students the diversity, creativity and exciting potential of a career in science."

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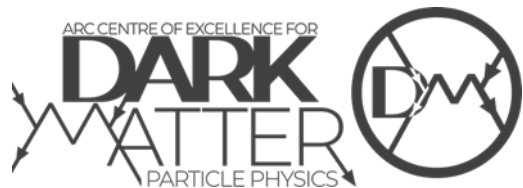
7 September, 2023

## Road trip showcases science to students

ATHERTON and Dimbulah students had the opportunity to engage with leading Australian researchers during the National Quantum and Dark Matter Road Trip for National Science Week recently.



Students Chris Mantaldi, Chaz Nehow, Liam Hoskins, Jett Macfarlane, and Ben Howard, with road trippers Jesse Slim and Victoria Bashi, taking part in a gravity well demonstration.



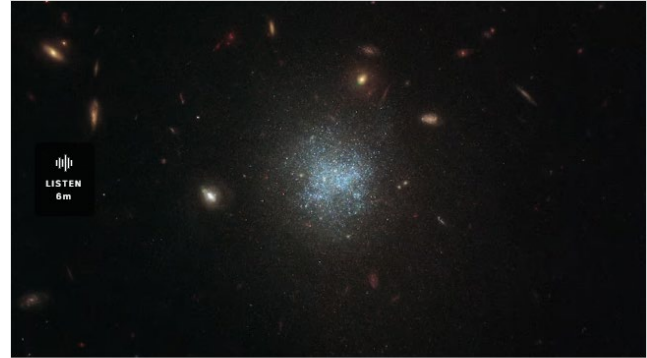


# Dark Matter Day, SUPL, CELLAR

ABC RADIO MELBOURNE | MELBOURNE MORNINGS →

## What is dark matter?

ABC Radio Melbourne  
Broadcast Tue 31 Oct 2023 at 8:30am



Dark matter within the constellation Cetus, located 30 million light-years away (Supplied: ESA/Hubble & NASA, D. Calzetti/CC licence)

Share   

October 31 isn't just Halloween, it's also Dark Matter Day. So, what is that outer space stuff?

Ben McAllister from the ARC Centre of Excellence for Dark Matter Particle Physics is



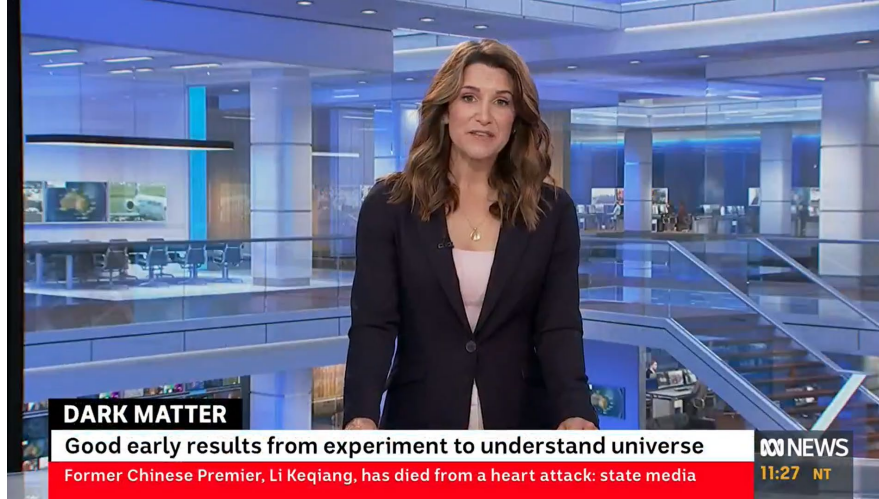
**NEWS BREAKFAST**

**DARK MATTER**

Good early results from experiment to understand universe

Israeli military carries out brief, 'targeted raid' in northern Gaza

**6:39 NT**



**DARK MATTER**

Good early results from experiment to understand universe

Former Chinese Premier, Li Keqiang, has died from a heart attack: state media

**11:27 NT**

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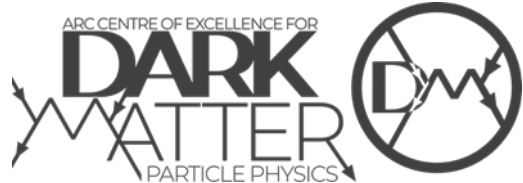
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Boon for Stawell dark matter research teams

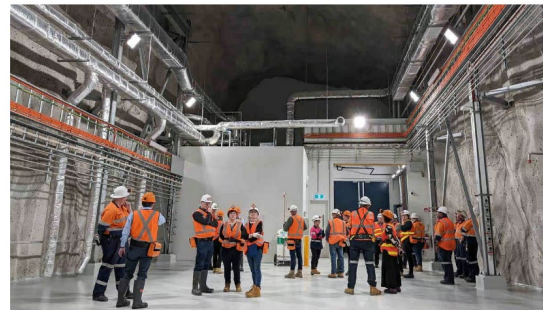
22 November 2023



**COSMOS** | My Cosmos | Space | Tech | Nature | Earth | History

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## Dark matter lab in VIC gold mine detects first 'muons'



Stawell Underground Physics Laboratory launch. Credit: University of Melbourne.



October 27, 2023

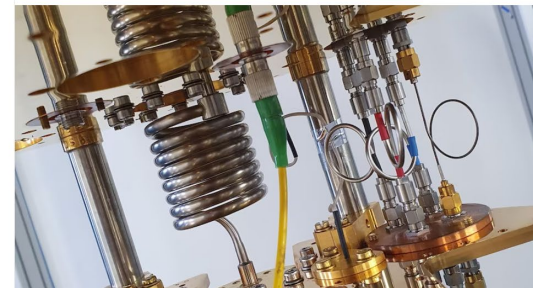
Researchers at the Stawell Underground Physics Laboratory (SUPL) in Victoria have detected the first transmissions from a muon detector inside the mine within the first few days of operating.

**ABC NEWS** | Set location for local weather

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## Quantum dilution refrigerator set to be installed at the Stawell Underground Physics Laboratory

ABC Wimmers / By Angus Mackintosh and Prue Bentley  
Posted 2h ago



### Top Stories

Macron urges Israel to stop bombing Gaza, Hamas says Israeli strikes hit hospitals

'Not dead enough': When a man had a heart attack, the Commonwealth Bank told politicians he was a fraudster

The Optus outage has thrown our cashless society into question, but experts say there's no going back

As the tide ebbs on this Victorian coast, a curious line of domes come into view

Step inside the luxurious new playground for rich Russians fleeing Vladimir Putin's war

ANALYSIS

# Muon Detectors for Schools



- mDetect Muon Detectors developed in collaboration with CDM members initially being utilized for mining
- CDM is working with Swinburne's Alan Duffy and secondary Physics teachers to develop lessons to pilot these muon detectors in secondary labs



# Node Kits for Outreach



- Kits with equipment and instructions to go to CDM node universities
- Developed from CDM HQ to allow researchers to focus on outreach
- Support local outreach at nodes
- Includes accessible materials

# Key takeaways!



- Unique approaches to Australian-specific challenges
- Create connections with geographically diverse audiences
- Supporting ECRs to develop their outreach and communication skills
- Use outreach to build community among centre researchers