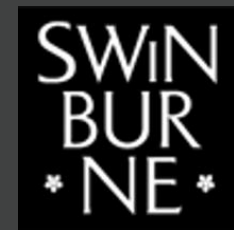


Education and Outreach Updates

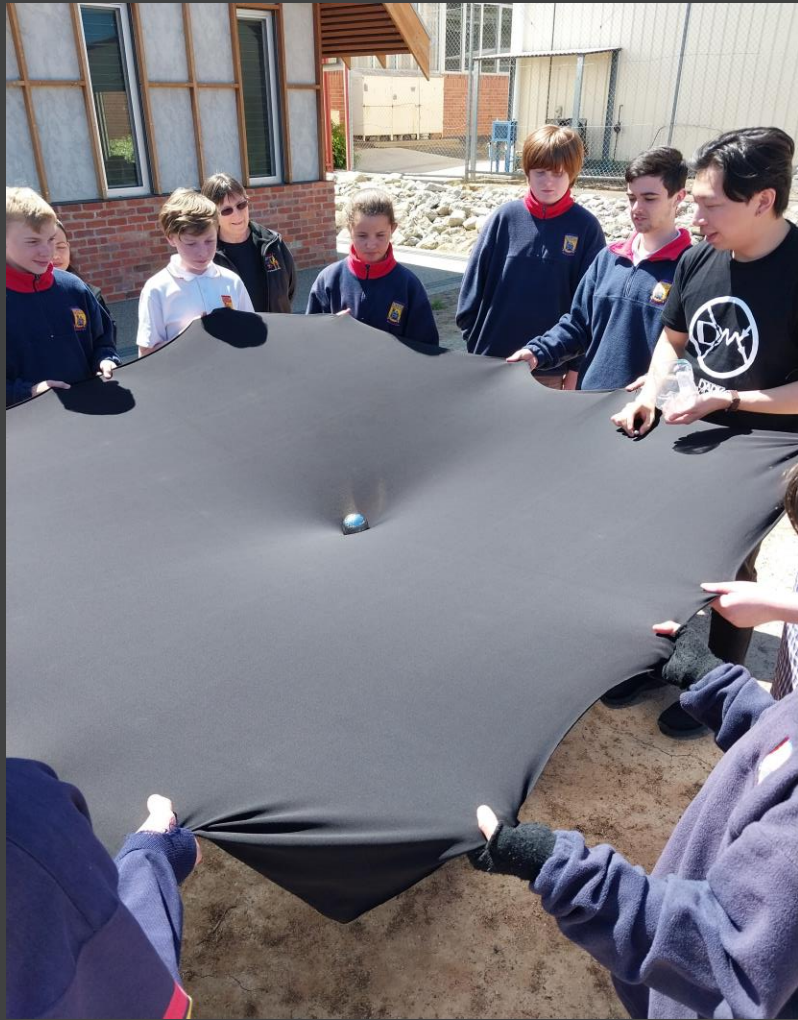
Jackie Bondell – Education and Outreach Coordinator
@jtkst10 @ARC_DMPP



Outreach Updates: What we did this year...

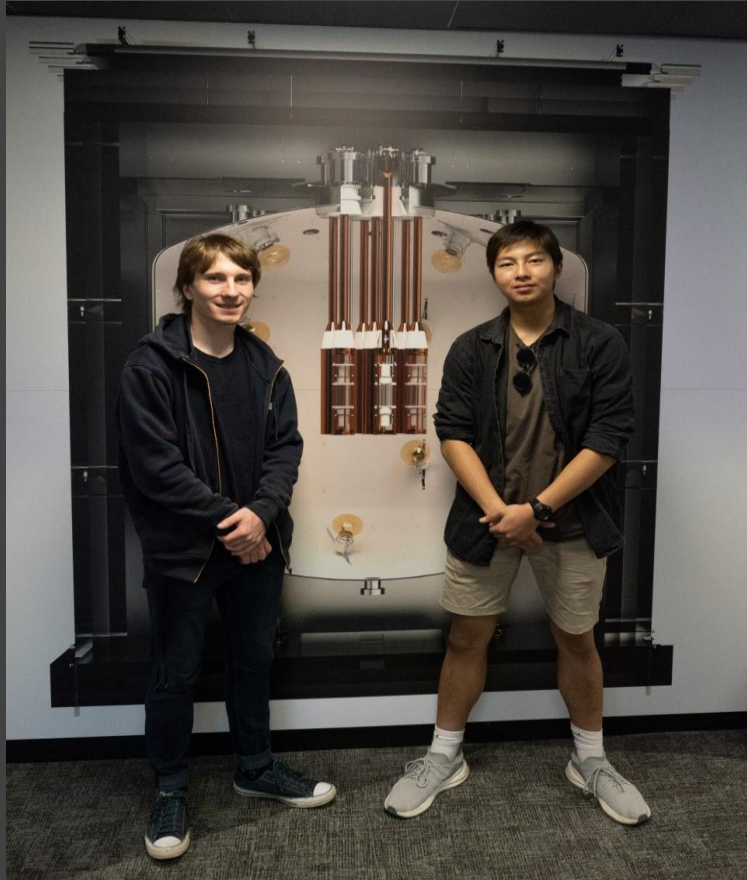
Dark Matter Partner Schools

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 Stawell Secondary
- Additional sessions with all Year 11 and 12 Physics students at the VIC partner schools
- Melbourne Graduate School of Education collected first data

Dark Matter Partner Schools



Extended Investigation Project

- Two Year 12 students from our Warrnambool partner school completed an Extended Investigation in partnership with CDM/UniMelb and the Victorian Centre for Higher Education Studies
- Mentored by Bill and Owen from UniMelb

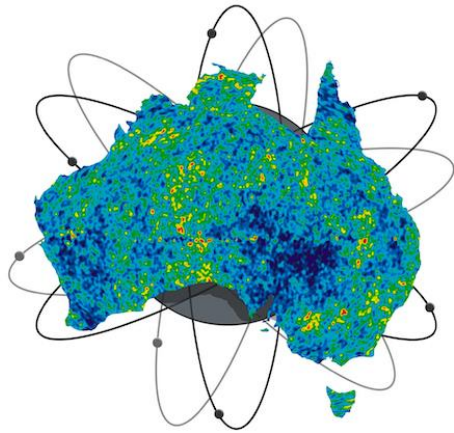
Teacher and Student Programs



- Multiple regional and national STEM workshops for teachers and students
- Opportunities for CDM members to help deliver activities as part of upcoming workshops
- Teacher Workshops as part of CONASTA and VIC Physics
- Article for SA Science Teachers

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 node cities
- 4750 km

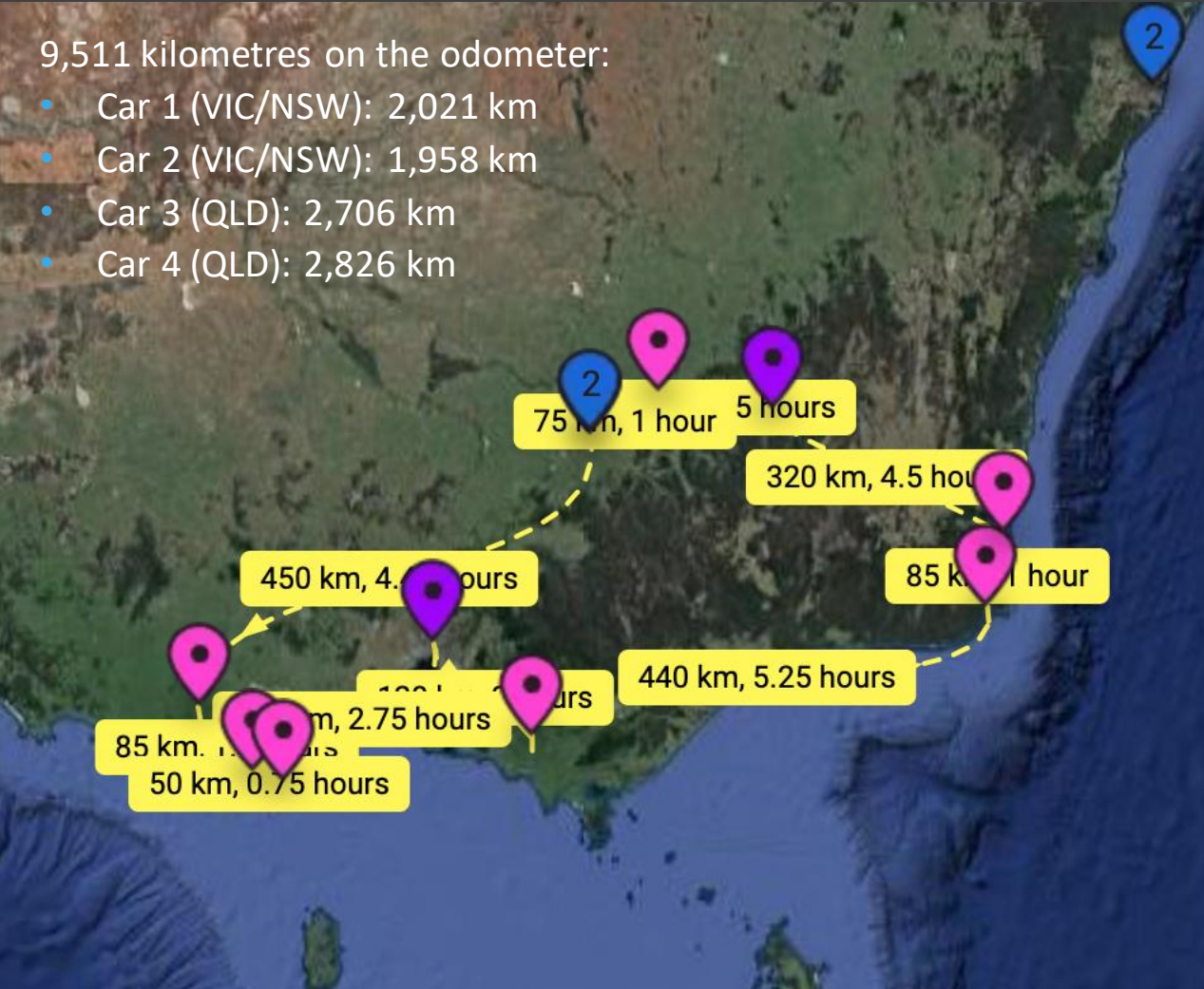
Quantum and Dark Matter Road Trip



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

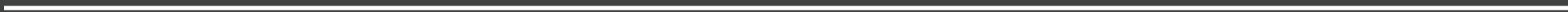
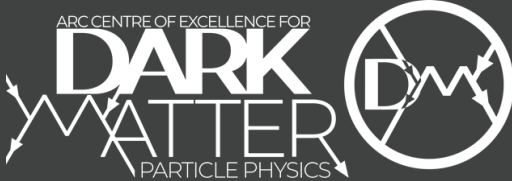
- 1,600 stickers
- 220 bags of jelly beans
- 64 fridge magnets
- 16 seed packets
- 500 EQUS/CDM merch
- 4 (smaller) car magnets
- 36 t-shirts
- 10 hoodies
- 10 luggage tags



Lots of memories! (Look for more in 2024)!



Outreach Updates: Media and Comms



Why engage with the media?



Celebrate successes



Highlight our research among the community and funders



Inspire a more diverse future generation



Build media/communication skills and profile



Foster goodwill in regions



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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Exploring the world of science

by Khyati Balalay



Scientists on the National Quantum and Dark Matter Road Trip visited Winton on Thursday, 24 August. Pictures: Contributed

by Khyati Balalay

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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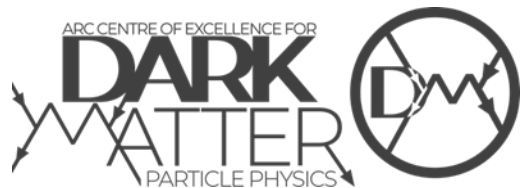
7 September, 2023

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



Road trip – showcasing our people across nodes

- Victoria Bashu (ANU) and Kerstin Beer (EQUS) quoted in Central West Queensland Leader
- Kirstin Beer (EQUS) interviewed by Emerald Today
- Ben McAllister (Swinburne and UWA) interviewed by ABC Melbourne Mornings with Sammy J, ABC Statewide Drive and ABC Ballarat
- Tim Hirsch (EQUS/UQ) interviewed by ABC Statewide Drive and ABC Brisbane
- Jeremy Bourhill (UWA) interviewed by ABC Perth
- Emily Filmer (UoA) published opinion piece in Education Today

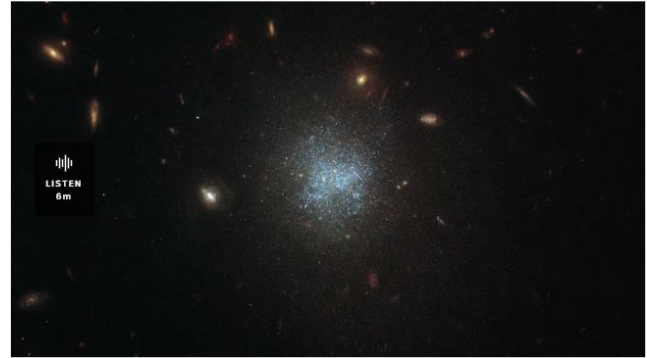
Dark Matter Day, SUPL, CELLAR

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. Colzetti/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

ABC NEWS 06:39 NT



DARK MATTER

Good early results from experiment to understand universe

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

ABC NEWS 11:27 NT

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Boon for Stawell dark matter research teams

22 November 2023

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

Cosmos » Core Sciences

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



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

October 27, 2023

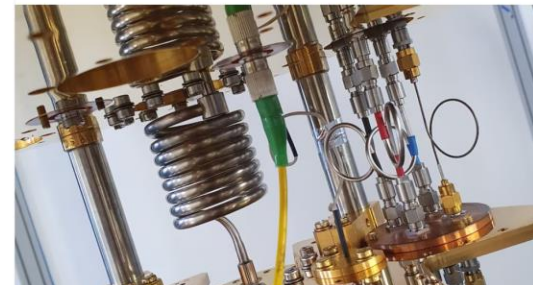
Researchers at the Stawell Underground Physics Laboratory (SUPL) in Victoria have detected the first transmissions from a muon detector inside the mine within the first few days of operating.

ABC NEWS | Set location for local weather

Just In | Watch Live | Voice Referendum | Politics | World | Business | Analysis | Sport | Science | Health | Arts | Fact Check | Coronavirus | Other

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

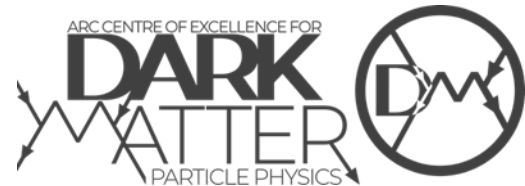
'Not dead enough': When a man had a heart attack, the Commonwealth Bank told politicians he was a fraudster

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



How do I get my news into the media?



What's next for 2024?



Seek opportunities to highlight our research



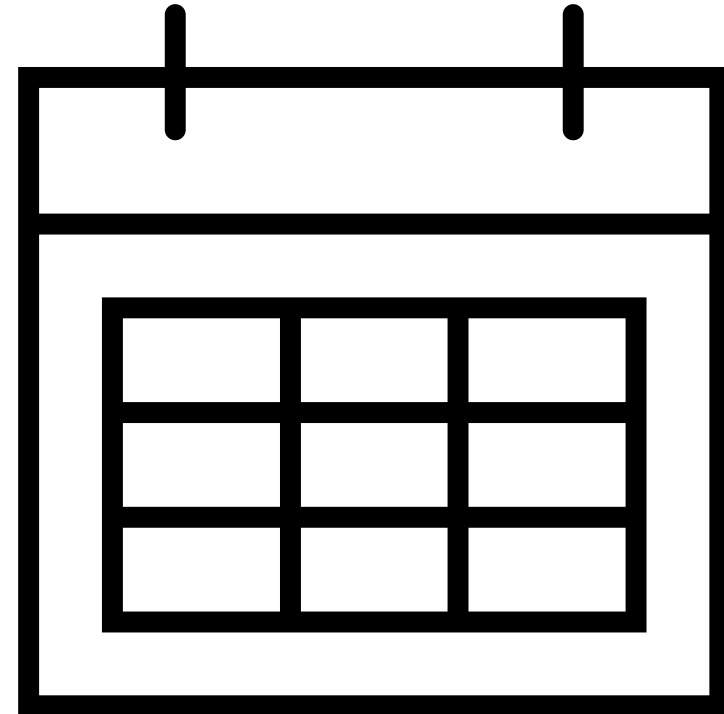
Draw on the excitement generated by SUPL



Media training to foster skills



Be thought leaders



Outreach Updates: What we are doing now...

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

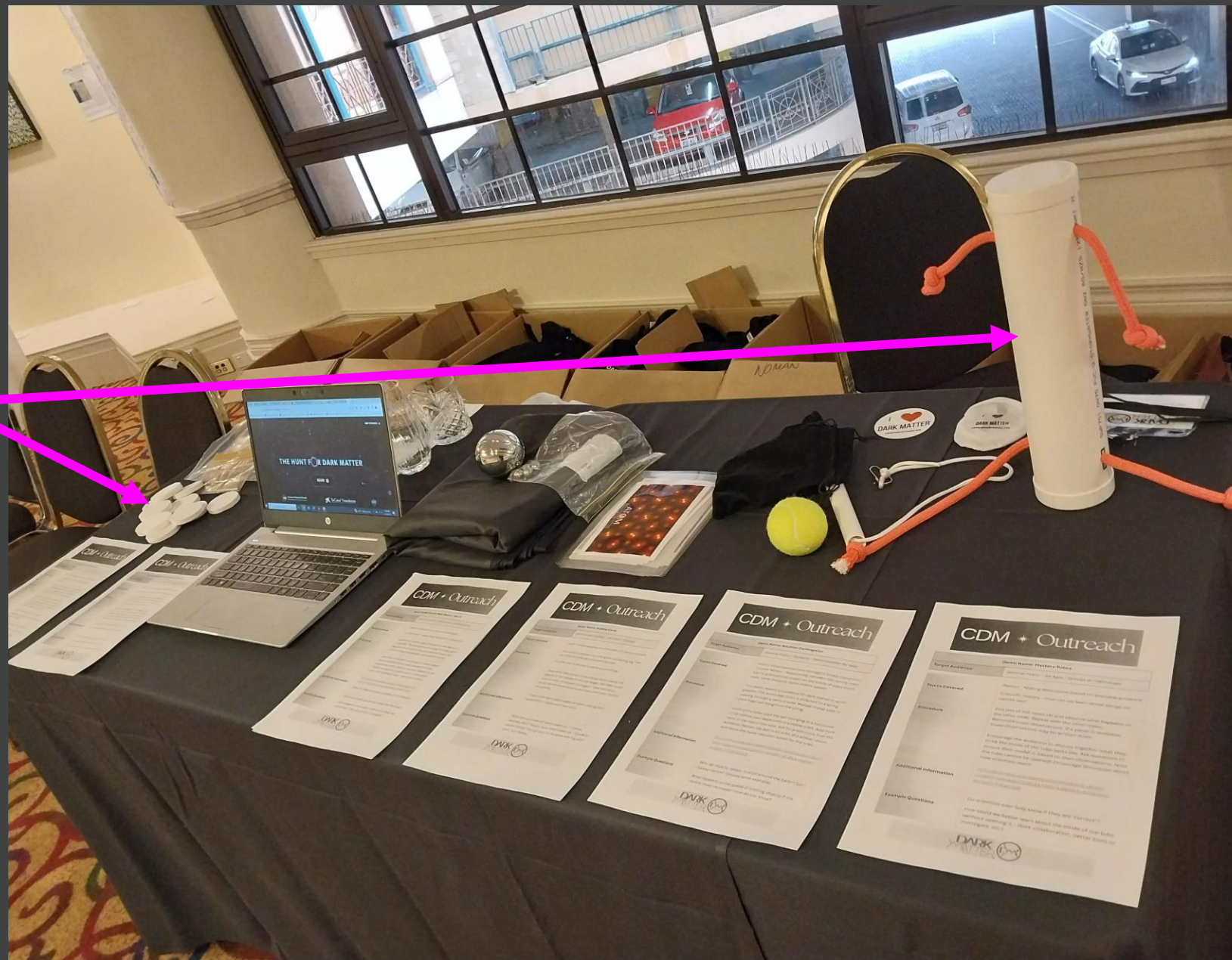
Node Kits for Outreach



- Kits with equipment and instructions are going home to the nodes this week!
- Electronic instructions, sample slide decks, and extension links on Confluence
- Some more items (3D Quark puzzles) will be posted

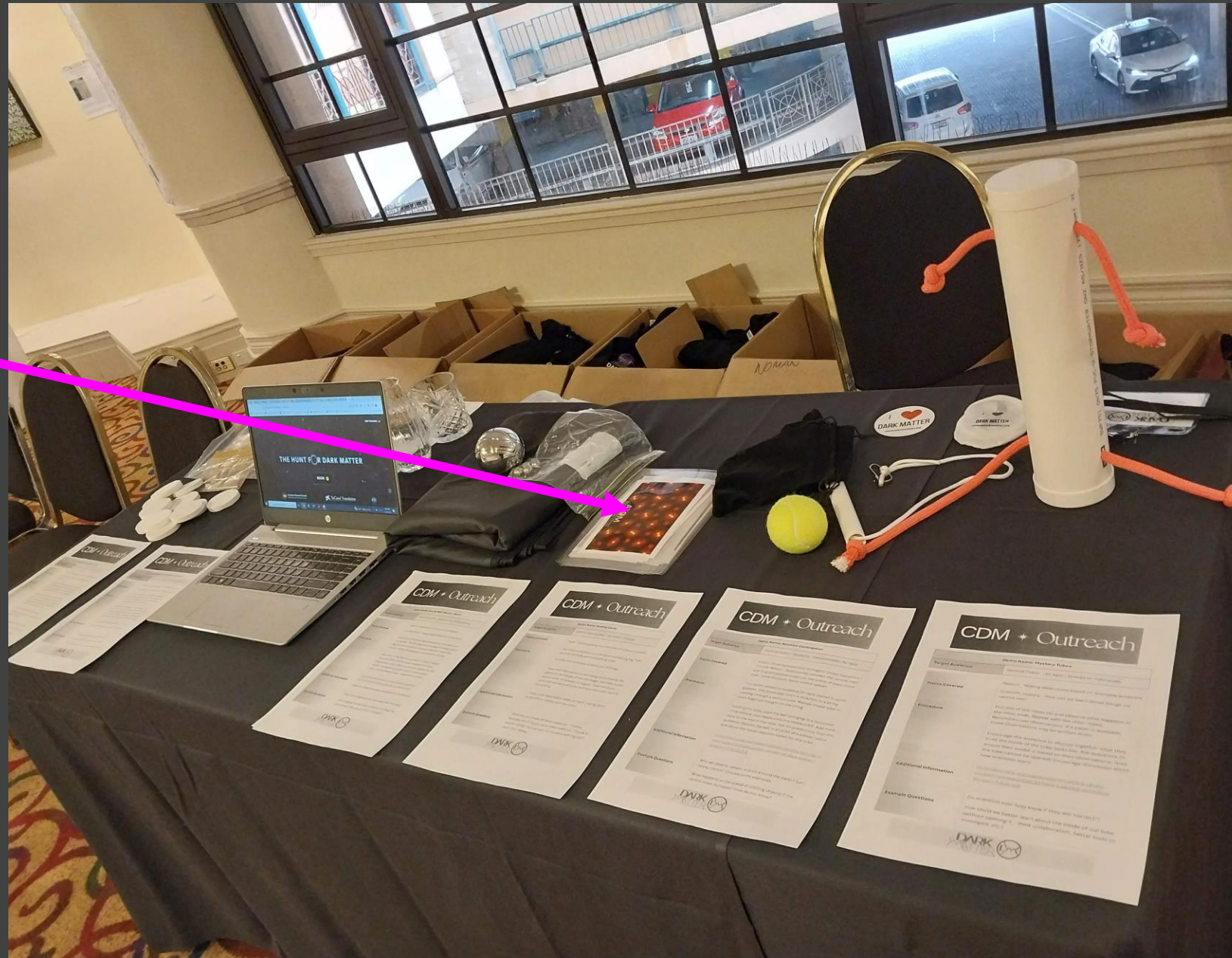
Mystery Tubes and Mystery Boxes

Theme: How can we learn about things we cannot see?



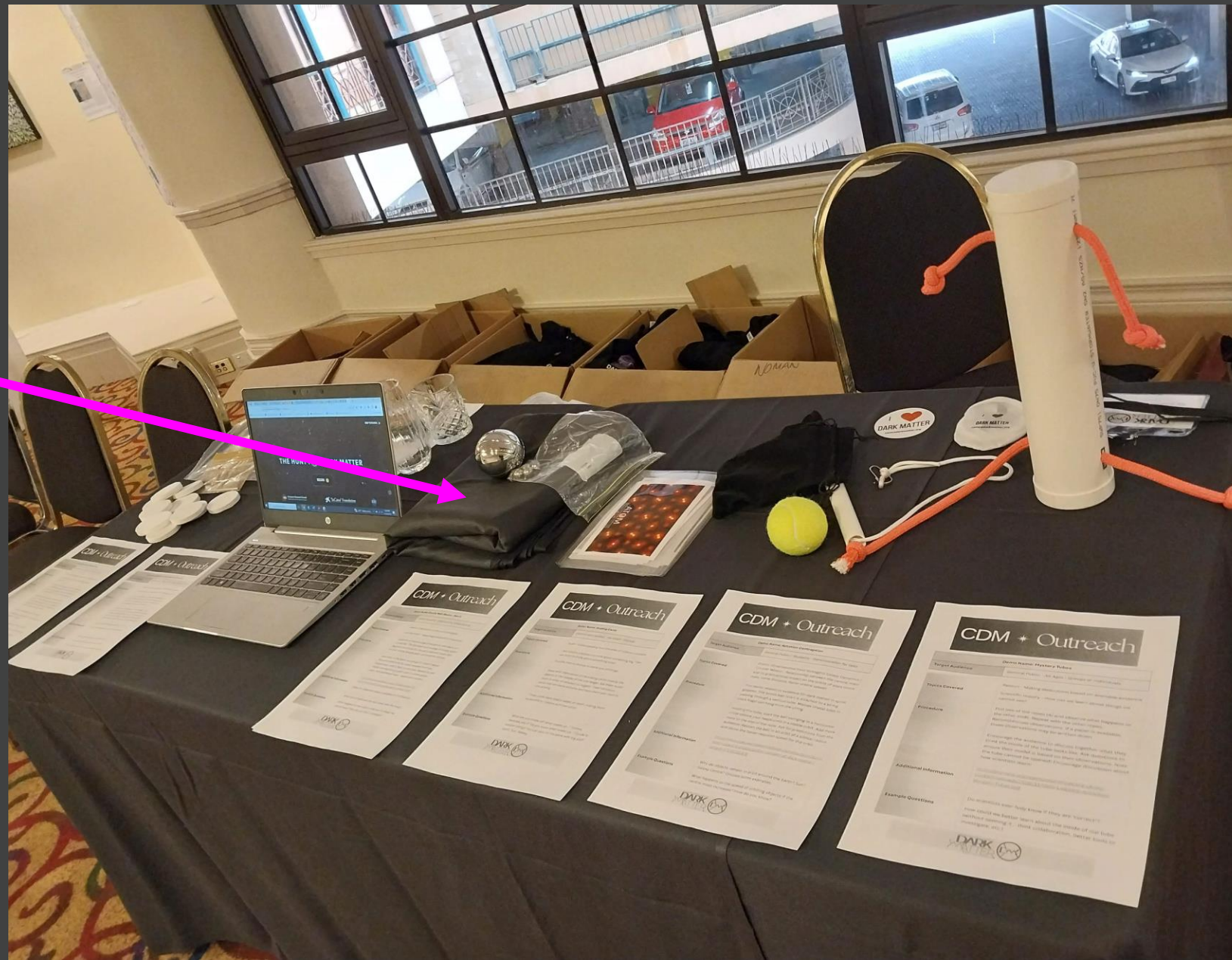
Scaling Cards (incl. braille labels)

Theme: What does it mean to be big? And small?



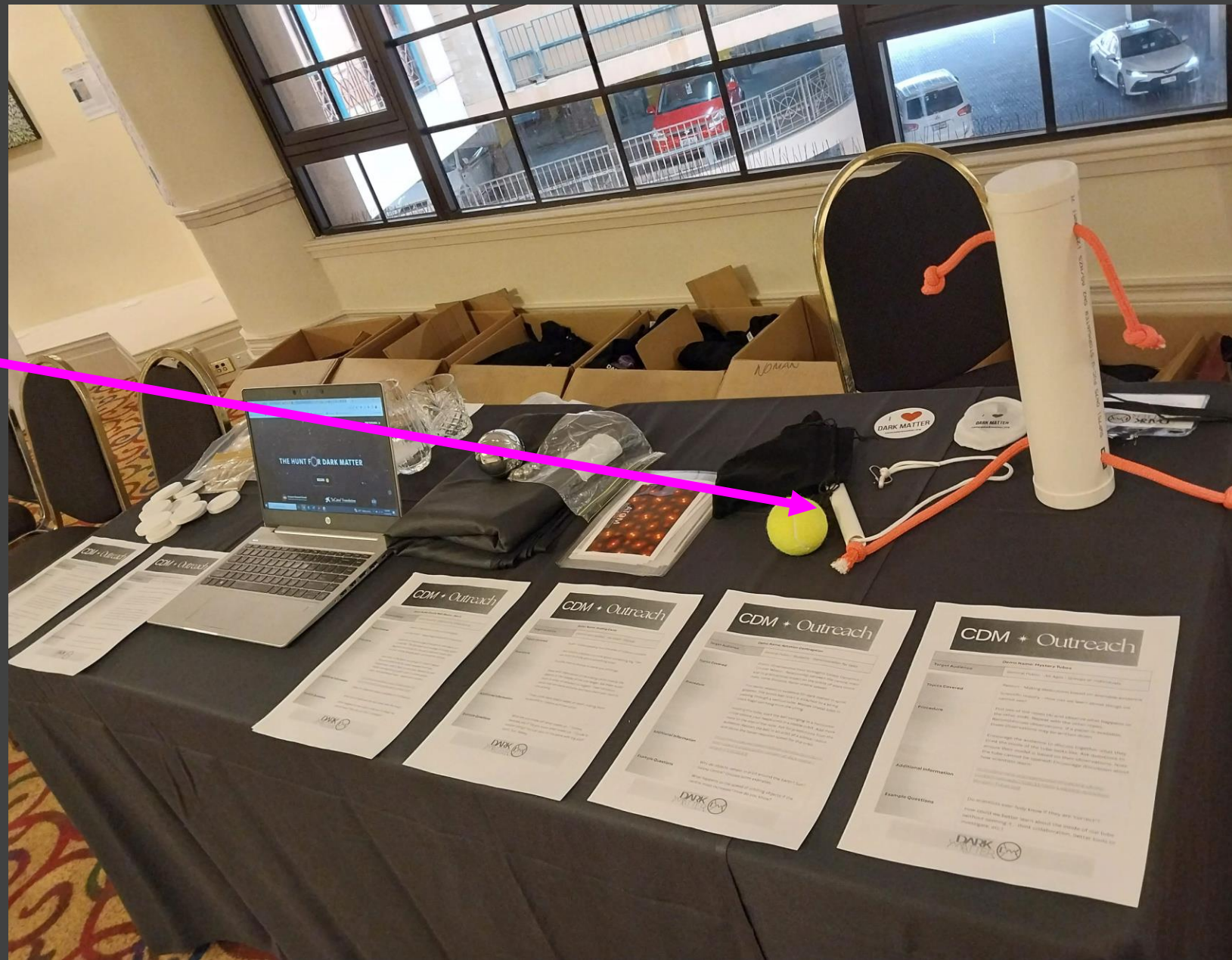
Gravity Well:

Theme: Using gravity to understand the existence of Dark Matter in the universe



Rotation Device:

Theme: How does mass impact the rotation of objects in a galaxy?



Web-based Interactives:
Theme: Finding Dark Matter
in the Universe



2024 Opportunities for CDM members

Partner school visits in VIC and NSW – join us on these visits!

Teacher and student STEM workshops – help deliver a DM activity!

ATLAS Masterclass PD with Teachers – help out as a specialist!

Have an outreach initiative or idea? Have a chat with us to see how we can support it.

Join the education-outreach channel on the CDM Slack

Road Trip – apply to be part of it... Get the merch... and the stories!



And...

- 2–3 cases of food poisoning
- 2 chance encounters
- 1 lost (but recovered) bag
- 1 road-kill incident
- 1 30th birthday
- 0 car magnets lost



2024 National Quantum & Dark Matter Road Trip

- Applied for a third National Science Week grant
- Visit places we haven't been
 - Tasmania
 - Brisbane to Perth a long way?
 - Brisbane to Brisbane a really long way?
 - Brisbane to Adelaide?
 - Darwin to Perth?
- Higher budget
- Longer(?)
- qdmroadtrip.org
- [@qdmroadtrip](https://twitter.com/qdmroadtrip)

