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FOR ALL-SKY ASTROPHYSICS



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Fast Radio Bursts present one of modern astronomy's greatest mysteries: what or who in the Universe is transmitting short bursts of radio energy across the cosmos?

Manisha Caleb, a PhD student at Australian National University, Swinburne University of Technology and the **ARC Centre of Excellence for All-sky Astrophysics (CAASTRO)**, has confirmed that the mystery bursts of radio waves that astronomers have hunted for ten years really do come from outer space.

Fast Radio Bursts are intense, millisecond-duration pulses of radio light that appear to be coming from vast distances. They are about a billion times more luminous than anything we have ever seen in our own Milky Way galaxy.

"One potential explanation of the mystery is that they weren't really coming from outer space, but were some form of local interference tricking astronomers into searching for new theories of their 'impossible' radio energy" says **Dr Chris Flynn**, UTMOST Project Scientist. "Manisha's work has shown this isn't the case."

"Or a bizarre explanation is that they were alien transmissions," says **ARC Laureate Fellow Professor Matthew Bailes** from Swinburne.

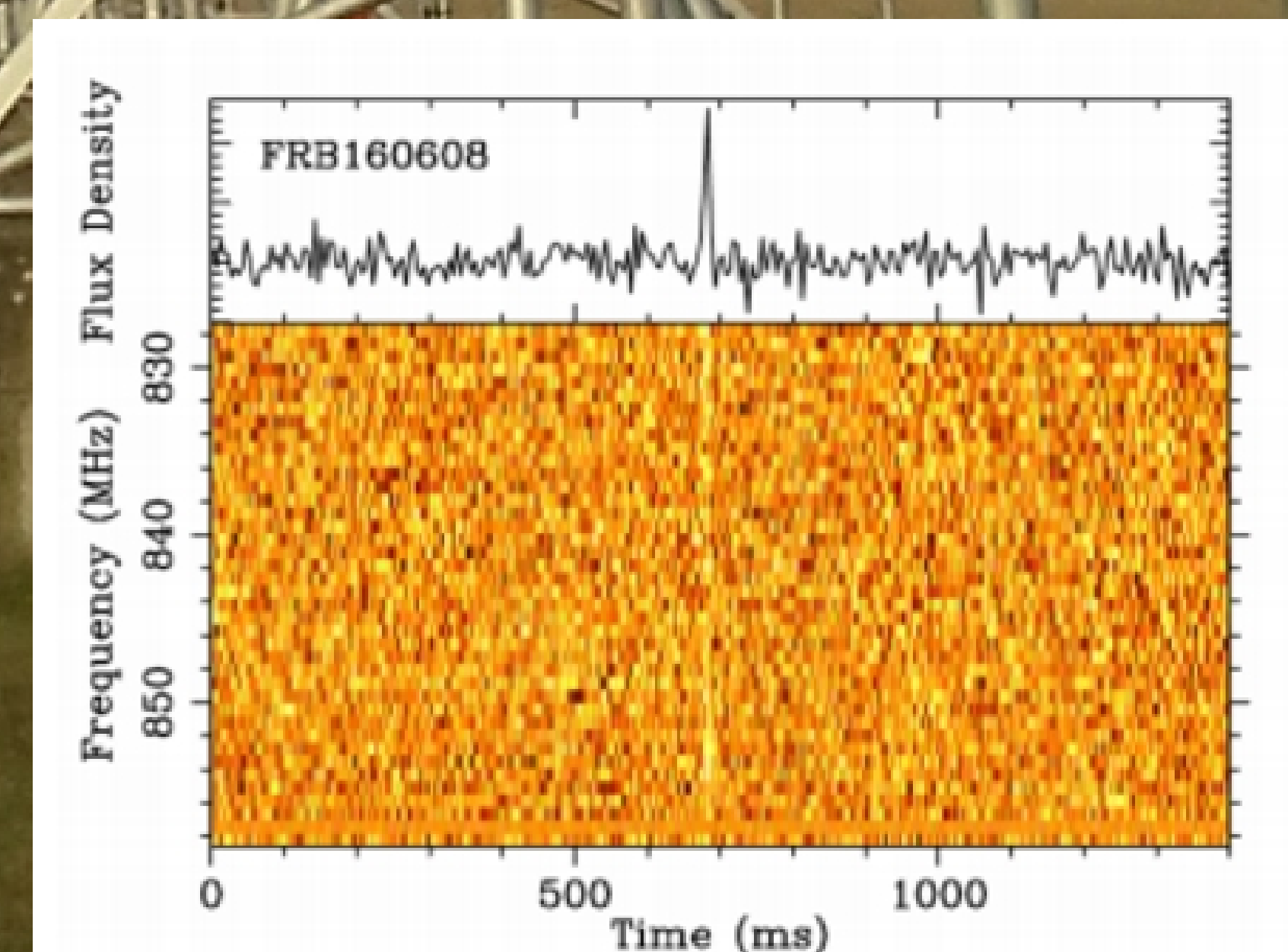
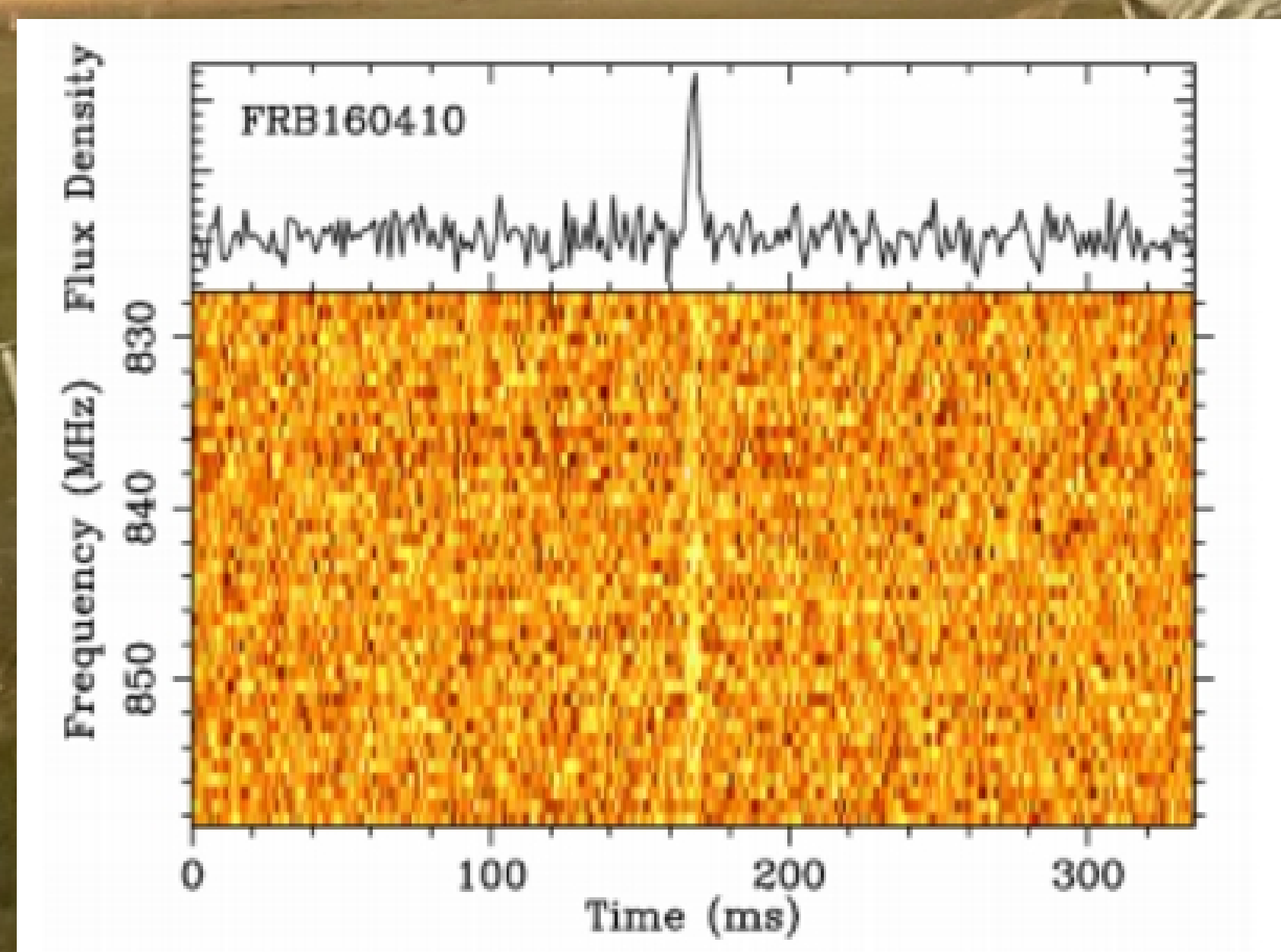
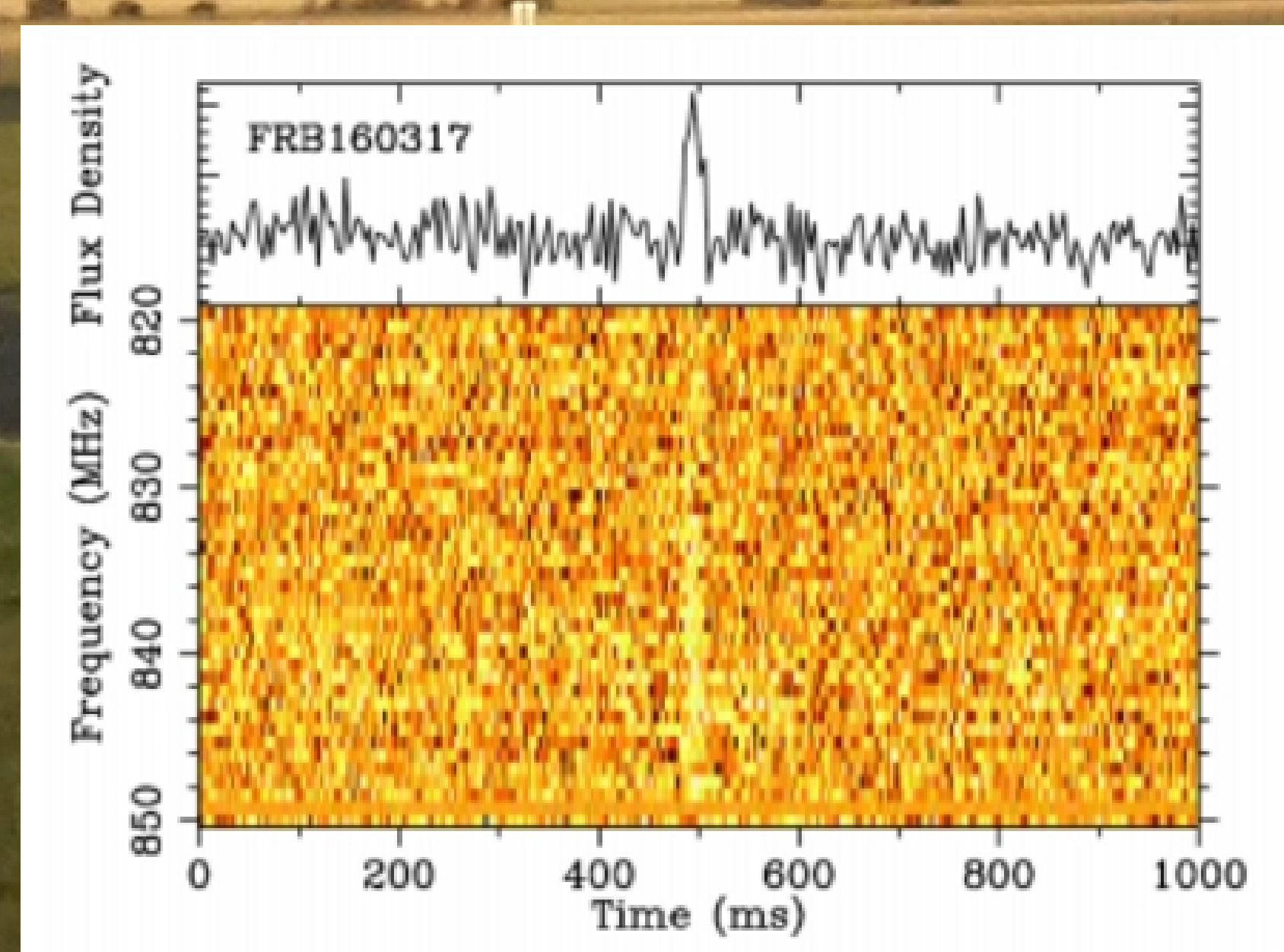
"It is very exciting to see the University of Sydney's Molonglo telescope making such important scientific discoveries by partnering with Swinburne's expertise in supercomputing", says **Professor Anne Green** of the University of Sydney.

Thanks to further funding from the Australian Research Council to **Dr Adam Deller**, the telescope will be improved even more to gain the ability to localise bursts to an individual galaxy.

"Figuring out where the bursts come from is the key to understanding what makes them", Ms Caleb says. "We're setting up Molonglo to pinpoint the very galaxies from which they originate."



The three Fast Radio Bursts discovered at UTMOST, seen here in the Summer skies over the telescope.
Image Credit : James Josephides/Swinburne



CAASTRO: caastro.org

UTMOST: astronomy.swin.edu.au/research/utmost/

