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The 2024 Jackson-Gwilt Award is awarded to Dr Keith Bannister and Professor Ryan Shannon

Fast Radio Bursts (FRBs) are intense pulses of radio waves from the distant Universe that last only a few milliseconds.

The combination of the small field-of-view of most radio telescopes and their inability to pinpoint the origins of FRBs, meant that, in the decade after their 2007 discovery, fewer than 20 FRBs had been found and confirmed to reside in other galaxies.

Working on the CSIRO's ASKAP radio telescope in Australia, Dr Keith Bannister and Professor Ryan Shannon developed a GPU-based detection system capable of searching antennas independently, and a "fly's-eye" mode to maximise the observed field-of-view.

After deploying their new system, the first FRB was found in less than five days, and in the next year they collected a sample of 20 FRBs, nearly doubling the previous decade's haul.

Whilst similar systems were later developed for MeerKAT and Caltech's Deep Synoptic Array, Dr Bannister and Professor Shannon's ASKAP system made the game-changing discoveries that established the field of FRB cosmology.

For these reasons Dr Bannister and Professor Shannon are jointly awarded the Jackson-Gwilt medal.