

## TRANSIENT SKY

**Fast radio bursts galore**

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Fast radio bursts (FRBs) have fascinated astronomers for the last ten years or so. Interest in FRBs has been renewed with the detection and localization of FRB 121102 — the only FRB found so far to repeat. However, a carefully designed FRB survey of the radio sky was largely missing. Ryan M. Shannon and collaborators present a unique sample of 20 FRBs from a radio survey with the Australian Square Kilometre Array Pathfinder (ASKAP), significantly adding to the 34 FRBs detected in the last decade.

The instrumental setup of ASKAP, especially its 'fly's-eye' radio antenna configuration and large field of view (30 deg<sup>2</sup> per antenna) allowed the authors to perform a radio survey at 1.3 GHz observing a total of 510,000 deg<sup>2</sup> at high-enough temporal resolution to detect and characterize FRBs. The resulting sample of 20 FRBs shows a range of dispersion measures — a measure of the amount of ionized matter through which the radio signal had to propagate — from 114 to 998 pc cm<sup>-3</sup>. The sample includes the nearest and the most energetic FRBs detected so far, which reflect the wide nature of this survey.

By comparing the fluences and dispersion measures of their sample with previous FRBs detected by deeper observations with the Parkes radio telescope, the authors show that the ASKAP sample comprises the local analogues of the fainter FRBs detected previously. This finding indicates that the dispersion measure is indeed a fair descriptor of the distance at which an FRB lies. Interestingly, the authors also performed follow-up observations to constrain the fraction of repeating FRBs and found it to be zero at a 99% confidence level (assuming that all FRBs follow the pattern of repetition of FRB 121102).

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