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### FAST Detects Multiple Bursts in L-band from FRB 121102

Di, L.; Zhang, X.; Qian, L.; Zhu, W.; Duan, R.; Werthimer, D.; Gajjar, V.; Zhu, Y.; Cobb, J.; Yue, Y.; Jin, C.; Zhang, B.; Gouiffes, C.; Wang, S.; Spitler, L.; Cruces, M.; Hessels, J.; Seymour, A.; Korpela, E.; Luo, J.; Gan, H.; Jiang, P.; Li, H.; Li, Q.; Liu, H.; Miao, C.; Niu, C.; Pan, G.; Pan, Z.; Peng, B.; Sun, J.; Tang, N.; Wang, Q.; Wang, P.; Pei, X.; Yan, J.; Yao, R.; Yu, D.; Yuan, M.; Zhang, H.; Zhang, L.; Zhang, S.

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## FAST Detects Multiple Bursts in L-band from FRB 121102

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on 2 Sep 2019; 01:32 UT

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Tracking observations of FRB 121102 were carried out with the newly commissioned Five-hundred-meter Aperture Spherical radio Telescope (FAST). We used the FAST L-band Array of 19-beams (FLAN), which has a FWHM of  $\sim 2.95'$  for individual beams and a  $\sim 26'$  footprint. The source was placed in the central beam, while all 19 beams were recorded. The bursts were firstly identified by the FRB backend on August 29th (UT), which performs real time signal processing of 19-beams data and automatic candidate selection/triggering. The subsequent single pulse search using multiple pipelines have turned up many tens of pulses with significant SNR in observations carried out so far, on the 29th, 30th, and 31st (UT). While careful cross-check are being carried out, the majority of these detections are expected to be credible. FAST has been

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targeting FRB 121102 since April of this year. In addition to the regular on-going FRB follow-up programs, the current observations was also motivated by timely and valuable alerts from our colleagues in the INTEGRAL team, Arecibo team, Max-Planck Institute for Radio Astronomy, Berkeley, and Cornell University. Given the significance of this source and its now apparent active state, FAST is executing more observations under the auspice of engineering testing time and multiple approved PI-led programs, which targeted FRB 121102. We encourage more ToO observations with other facilities.

*FAST pulsar survey results*

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