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Detection of a bright burst from FRB 121102 with Apertif at the Westerbork Synthesis Radio Telescope.

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on 1 Sep 2017; 15:17 UT

Credential Certification: [Joeri van Leeuwen \(leeuwen@astron.nl\)](mailto:leeuwen@astron.nl)

Subjects: Radio, Transient, Fast Radio Burst

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We observed the repeating FRB 121102 (Spitler et al. 2016) while commissioning the Apertif Radio Transient System (ARTS; van Leeuwen 2014) on the Westerbork Synthesis Radio Telescope. Starting at UTC 2017-08-31 06:23:37, we recorded 300 MHz of bandwidth around 1.4 GHz from the central set of dipoles in the Apertif phased array feeds, from a single dish. The observation was the first with ARTS towards this source and lasted for 2 hours.

Data were coherently dedispersed at the known DM of 557 pc/cc, and channelised. Next, these filterbank data were searched offline for radio bursts, both in time and over a limited dispersion-measure range. At barycentric MJD 57996.2656372 ARTS detected a bright FRB, its first, with a fluence of 35 +/- 10 Jy ms, a peak flux of 24 +/- 7 Jy, and a FWHM of 1.3 +/- 0.2 ms, at an optimized DM of 555 pc/cc. No further bursts were discovered in the observing session.

Following the detection of multiple bright pulses from FRB 121102 at higher frequencies with the Green Bank Telescope (ATel #10675) on 26 August, this detection indicates the FRB source may be in a phase of outburst.

Further details and plots are available at http://www.alert.eu/FRB121102_20170831/

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