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e-EVN detections of GRB130427A and GRB130702A

Paragi, Z.; van der Horst, A.J.; Yang, J.; Kouveliotou, C.; Wijers, R.A.M.J.; Granot, J.

Published in:
The astronomer's telegram

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Citation for published version (APA):

Paragi, Z., van der Horst, A. J., Yang, J., Kouveliotou, C., Wijers, R. A. M. J., & Granot, J. (2013). e-EVN detections of GRB130427A and GRB130702A. *The astronomer's telegram*, 5242.

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e-EVN detections of GRB130427A and GRB130702A

ATel #5242; *Z. Paragi (JIVE), A. J. van der Horst (UvA), J. Yang (JIVE), C. Kouveliotou (NASA/MFSC), R. A.M. J. Wijers (UvA), J. Granot (Open U. Israel)*
on 1 Aug 2013; 16:01 UT
Credential Certification: *Zsolt Paragi (zparagi@jive.nl)*

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Subjects: Radio, Gamma-Ray Burst, Transient



We observed GRB130427A (GCN #14448, #14455, #14471, #14480, #14494) at 5 GHz with the European VLBI Network on 2013 May 3 from 15:50 UT till 02:20 UT the next day. All e-EVN stations in Europe, and the telescopes in Shanghai, Hartebeesthoek and Arecibo participated in the observations. The aggregate bitrate was 1024 Mbps for most telescopes. Shanghai and Arecibo observed the same bandwidth but at a lower bitrate of 512 Mbps and using 1-bit sampling. The target was phase-referenced to J1134+2901, a VLBI calibrator 1.4 degrees away. We detected GRB130427A: the data are consistent with an unresolved source with flux density of $460 \pm 60 \mu\text{Jy}$ at the position of

RA(J2000) = 11h 32m 32.80872s, DEC(J2000) = +27d 41' 56.0203"

with an estimated error of 0.6 mas. The errors include statistical and systematic components; the latter were estimated more conservatively because of larger uncertainties in WSRT and Arecibo calibrations.

GRB130702A (GCN #14967, #14971, #14972, #14973, #14979, #14983; ATel #5189, #5191) was observed with the e-EVN at 5 GHz on 2013 July 15 from 13:49 UT till 00:05 UT the next day. We used the same observing setup and antenna configuration, but this time Arecibo could not participate. The source was phase-referenced to J1425+1424, 1.6 degrees far away. GRB130702A data are consistent with a $630 \pm 40 \mu\text{Jy}$ unresolved source at a position of

RA(J2000) = 14h 29m 14.77633s, DEC(J2000) = +15d 46' 26.3710"

with an estimated error of 0.25 mas.

e-VLBI research infrastructure in Europe is supported by the European Union's Seventh Framework Programme (FP7/2007-2013) under grant agreement RI-261525 NEXPreS. The EVN is a joint facility of European, Chinese, South African and other radio astronomy institutes funded by their national research councils.

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rrutledge@astronomerstelegram.org

dfox@astronomerstelegram.org

