LIGO/Virgo G211117 / GW151226: LOFAR follow-up

Rowlinson, A.; Broderick, J.; Jonker, P.G.; Fender, R.P.; Wijers, R.A.M.J.; Stappers, B.W.; Ghosh, S.; Nissanke, S.; Shulevski, A.

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FROM: Antonia Rowlinson at Amsterdam and ASTRON <b.a.rowlinson@uva.nl>

A. Rowlinson (UvA, ASTRON), J. Broderick (ASTRON), P.G. Jonker
(SRON/RU), R.P. Fender (Oxford), R.A.M.J. Wijers (UvA), B.W. Stappers
(Manchester), S. ter Veen (ASTRON), S. Ghosh (RU), S. Nissanke (RU),
A. Shulevski (ASTRON) report on behalf of the LOFAR Transients Key
Science project

On December 26, 2016, starting at 14:20 (UTC), we observed a large fraction
of the localization error range of the Advanced LIGO trigger G211117
(GW151226) with the ILT (International Low-Frequency Array [LOFAR]
Telescope). This is an additional set of LOFAR observations of these fields
at 1 year following the detection. The observations were obtained with the
High-Band Antennas (HBA) at a centre frequency of 145 MHz (bandwidth
15.6 MHz). We used 6 simultaneous beams on the sky, where each
beam has a field of view of approximately 12 deg^2 (beam FWHM 3.9
degrees). The beam centres are given below:

Pointing 1 (starting at 14:22 UTC and 18:22 UTC)
1) 39.750000 19.433333 02:39:00.00 +19:26:00.0
2) 37.478042 19.814500 02:29:54.73 +19:48:52.2
3) 39.056375 21.630111 02:36:13.53 +21:37:48.4
4) 40.443625 17.236556 02:41:46.47 +17:14:11.6
5) 42.021958 19.052167 02:48:05.27 +19:03:07.8
6) 37.817000 17.209667 02:31:16.08 +17:12:34.8

Pointing 2 (starting at 14:52 UTC and 18:52 UTC)
1) 43.523458 24.012694 02:54:05.63 +24:00:45.7
2) 41.204125 24.163000 02:44:48.99 +24:09:46.8
3) 42.663792 26.172056 02:50:39.31 +26:10:19.4
4) 44.383125 21.853333 02:57:31.95 +21:51:12.0
5) 45.842792 23.862389 03:03:22.27 +23:51:44.6
6) 41.683000 21.657000 02:46:43.92 +21:39:25.2

Pointing 3 (starting at 15:22 UTC and 19:22 UTC)
1) 47.347500 28.815800 03:09:23.40 +28:48:56.9
2) 45.035000 29.249472 03:00:08.40 +29:14:58.1
3) 46.833417 31.111750 03:07:20.02 +31:06:42.3
4) 47.861583 26.519861 03:11:26.78 +26:31:11.5
5) 49.660000 28.382139 03:18:38.40 +28:22:55.7
6) 45.311208 26.473306 03:01:14.69 +26:28:23.9

Pointing 4 (starting at 15:52 UTC and 19:52 UTC)
1) 51.762750 33.469417 03:27:03.06 +33:28:09.9
2) 49.412000 33.897167 03:17:38.88 +33:53:49.8
3) 51.335000 35.820194 03:25:20.40 +35:49:12.7
4) 52.190500 31.118639 03:28:45.72 +31:07:07.1
5) 54.113500 33.041667 03:36:27.24 +33:02:30.0
6) 49.550083 31.096639 03:18:12.02 +31:05:47.9

Pointing 5 (starting at 16:22 UTC and 20:22 UTC)
1) 56.818083 37.934167 03:47:16.34 +37:56:03.0
2) 54.463958 38.555972 03:37:51.35 +38:33:21.5
3) 56.699333 40.366111 03:46:47.84 +40:21:58.0
4) 56.936833 35.502222 03:47:44.84 +35:30:08.0
5) 59.172208 37.312361 03:56:41.33 +37:18:44.5
6) 54.117958 35.824611 03:36:28.31 +35:49:28.6

Pointing 6 (starting at 16:52 UTC and 20:52 UTC)
1) 62.380833 42.438778 04:09:31.40 +42:26:19.6
2) 60.036333 43.290528 04:00:08.72 +43:17:25.9
3) 62.643042 44.919389 04:10:34.33 +44:55:09.8
4) 62.118625 39.958167 04:08:28.47 +39:57:29.4
5) 64.725333 41.587028 04:18:54.08 +41:35:13.3
6) 59.555833 40.151139 03:58:13.40 +40:09:04.1

Pointing 7 (starting at 17:22 UTC and 21:22 UTC)
1) 68.908792 46.437806 04:35:38.11 +46:26:16.1
2) 66.516750 47.358250 04:26:04.02 +47:21:29.7
3) 69.395792 48.954111 04:37:34.99 +48:57:14.8
4) 68.421792 43.921500 04:33:41.23 +43:55:17.4
5) 71.300833 45.517361 04:45:12.20 +45:31:02.5
6) 65.573417 44.433722 04:22:17.62 +44:26:01.4

Pointing 8 (starting at 17:52 UTC and 21:52 UTC)
1) 76.256792 50.093972 05:05:01.63 +50:05:38.3

2) 73.881750 51.253417 04:55:31.62 +51:15:12.3
3) 77.159833 52.577833 05:08:38.36 +52:34:40.2
4) 75.353750 47.610111 05:01:24.90 +47:36:36.4
5) 78.631833 48.934528 05:14:31.64 +48:56:04.3
6) 72.434875 48.392333 04:49:44.37 +48:23:32.4

The observations cover roughly 200 square degrees in total. Each field was observed for a total of 53 min (2 x 26.5 min) with 10s time resolution after pre-processing.

Analysis is ongoing.