

Torun (Tr) Station Report

(September 26th, 2014)

Brief Report of Recent EVN Session Problems

All experiments scheduled for the February/March 2014 session were carried out. However a number of observations were affected by malfunctioning of one or two of our old analogue BBCs. Apart from this, considerable losses of data resulted from wrong LO setting (entire EA053C and EG062F), antenna controller failure (about 3 hours during EH028B), problems with control computers (2 hours during EV019B) and late start (lost 15 minutes of EF025). There were also a few of other minor problems which resulted usually in the losses of the order of 10 minutes.

The second EVN session (May/June 2014) was carried out with a new DBBC unit (see below) that replaced worn out analogue BBCs. All 34 experiments scheduled were observed. No major problem occurred, but number of minor ones caused partial losses of data. In particular, automatic disk-pack change during observation did not work, so in each such case recording continued till the pack was full, which led to further complications and data loss. Also, packs conditioned on Mark5A prior to the session were giving errors when used for recording in Mark5B. After a few such cases we found that quick erasing in Mark5B (naked SSErase command) helps. We had a note from JIVE that one of 5cm experiments (ES072H) did not give fringes, which we suspect was due to wrong LO setting (off by 1 MHz).

Post-session calibration results (Tcal and Tsys) are presented graphically at:

<http://www.astro.umk.pl/~kb/Reports/Cal2014-1/Sesja14-1.html> and
<http://www.astro.umk.pl/~kb/Reports/Cal2014-2/Sesja14-2.html>

Outside these EVN sessions in the period January – September 2014 Tr was scheduled in about 360 short duration (of about 1 hour each) RadioAstron (RA) experiments and 15 typical experiments (e-VLBI, ToO and global RA), all totaling to about 700 hours of observing. Of these one global RA (on Easter Monday) was not observed because we could not secure an operator and some short RA experiments were lost due to various reasons (notably 8 of them as a result of our maser failure, about which see below).

Personnel Changes

There were no changes in this area.

Changes/Upgrades Made to Hardware/Software

Current software versions

- Mark5A OS is Debian "Etch" version 4.0 with the package mark5a_1.0.7-i386.deb
- Mark5A application code is Mark5A2007y.225d
- The StreamStor driver version is 9.21
- FS 9.10.4 version is used since session 3/2011.
- e-VLBI jive5ab version is jive5a-2.5.0-SDK8.
- Mark5B (with DBBC) is controlled by FS 9.11.4 and jive5ab version 2.5.0; the version of software for DBBC in the 'tunable' mode is 1.04.

Mark5B upgrade and DBBC

Before the May/June 2013 session an arrangement was made with JIVE to borrow their Mark5A for recording parallel with our Mark5A upgraded to Mark5B and DBBC. Since then a number of tests (full experiment recordings or ftp fringe tests) were performed, most apparently successful, a few failed. During the last session there were 8 experiments scheduled for parallel recording with the DBBC, and the ftp tests gave fringes in all of them. The performance of DBBC back-end in these ftp data tests is detailed here:

<http://www.astro.umk.pl/~kb/Reports/Cal2014-1/DBBC/DBBC.html>

Further analysis of the entire experiments, as done in JIVE, were reported by Bob Campbell on April 23, and he concluded that our station may move to DBBC observing. So the whole EVN session II/2014 was observed with the DBBC.

Problems with frequency standard

In July 2013 an outage resulted in a failure of setup-and-monitoring system of our EFOS15 frequency standard, which is now about 20 years old. Since then, although the maser works fine, we cannot monitor its parameters nor can we adjust its frequency (which is off by 0.025 Hz corresponding to constant drift in time of about 1.5 μ s/day). In the late June, 2014 the maser stopped working. Luckily our staff could somehow locate a damaged element in the electronics and repair the component. Since there seem to be no chances for repair of this old standard as a whole, steps were taken to secure funds for a purchase of a new frequency standard.

Conferences

44th Young European Radio Astronomers Conference (YERAC) was held between 8 and 12 September, 2014. 39 young scientists participated. For further details see <http://yerac2014.astro.umk.pl/>

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