

Onsala Station Report

EVN Session 2/2019

Fringes to the Onsala 20 and 25m radio telescopes were found in all the NMEs.

Due to the high-speed winds, there are three experiments (EH036A, EG100C, RA003) suffered partial failure and two experiments got completely failure (EH036E, EK038D). During these scans of off-source, the data were still recorded.

Onsala data had a certain (~0.1%) packets dropped not only at the beginning of some scans but also during some scans. After some investigations by the local expert Simon Casy, there was no culprit found. After EP113E, the Astro-Flexbuff was rebooted and the minor recording issue was just gone. During the session, we also noticed that jive5ab 2.8.1 might dropped the last packet of each recording scan, which might corresponds to ~3s data at a recording rate of 256 Mbps. Later, jive5ab 2.9 has been installed, tested, and used as the default version at Onsala.

Onsala has used V107 beta3 and FS 9.13.1.rc2 in the session. There were some negative Tsys data and many fake Tsys-overflow events, i.e. \$\$\$\$\$\$, in the log files because of a known firmware bug. So, the log files were a bit of dirty.

The IF output of the L-band receiver has been widened by running the new hardware and fiber IF system. Now, Onsala can cover 1.2-1.75 GHz. Soon, the IF output of the C-band receiver (4-7.5 GHz) will be also boosted to support 32Gbps observations. The IF output of the L-band receiver (1.1-1.75 GHz) will be maximized as well. The narrow-band 130 MHz RF filter for the standard L-band EVN experiments will be still available.

EVN Session 1/2019

Fringes to the Onsala 20 m and 25 m radio telescopes were found in all the NMEs. All the X-band only experiments were performed with 100% metal sub-reflector to gain the higher sensitivity. It should be pointed out that Onsala has a cooled receiver too at S band. The high Tsys of ~150 K at S band is because the DPFU at X band is used. There were a few experiments (EY033C, EC063D, N19L1, ER047A, EP106F) missed a few hours due to strong winds.

Onsala successfully participated in all the e-VLBI experiments as well. In the testing part of the e-VLBI session of 2019 March, fringes to Onsala suddenly went away. After some power cycles and re-loading firmware, the magnitude bits were not recovered in the local recording tests. Later, the broken DBBC2#2 was replaced by DBBC2#1 and fringes to Onsala were saved. After the e-VLBI session, Gino Tuccari and Sven Dornbusch remotely checked the problematic DBBC2#2. Later, it was sent to Bonn. The problem was finally located and fixed

by Michael Wunderlich. In the board of FilaIn, there was a bad connection in one of the internal layers.

EVN Session 3/2018

Fringes to the Onsala 20 and 25m radio telescopes were found in all the NMEs. Onsala successfully participated in all the experiments.

The latest version of FS 9.13.0 was used in the session. There were no known problems. In the ftp-fringe test experiments N18L3 and N18K3, the beta version firmware of DDC V107 was also tested with the 2nd DBBC2 (ADB1) at Onsala.

Because of the strong winds, Onsala 25m radio telescope had no observations in three experiments (EM133B, EG104A, ES090A). In the rest experiments, there were no known problems.

VLBI Group, Onsala Space Observatory