Onsala Station Report

EVN Session 3/2020

Fringes to the Onsala 20 and 25m radio telescopes were found in all the NMEs. The latest FS version 9.13.2 and DBBC2 firmware DDC V107beta3 were used. The early problem of the fake clock jumps in the plots of gps-fmout vs time was fixed in Summer. During the X-band part, the solid sub-reflector was used in order to gain the better sensitivity. To support the 4 Gbps (dual pol, 512 MHz per pol) observations, Onsala has started to use the new nominal LOs of 4088 MHz at 5 GHz, 5902 MHz at 6.7 GHz, 21480 MHz at 22 GHz. The testing observations show that Onsala had full 512-MHz frequency coverage.

At Onsala, we learned that our Flexbuff might have a certain data loss during the >=2 Gbps observations if the Flexbuff stays in the idle state for a relatively long time (e.g. long Summer vacation or just a few weeks). So, we have started to reboot Astro-Flexbuff once before every session. All the required setup and JIVE5ab will be also automatically started via a script wrote by Simon Casey.

The session were operated remotely by Franz Kirsten during the L-band part and Jun Yang during the rest parts. Most L-band experiments suffered strong winds and lost significantly observing time because the 25m telescope was automatically stowed. In the rest parts, there was only one known minor failure. In ED048A, there should be no fringes in the first two hours because the LO was 5200 MHz instead of 5902 MHz. This is due to a network communication problem resulting from a bad network cable. Our support scientist went to the observatory to manually change the LO. Fringes to Onsala were also seen in the later 5cm experiment RSC07.

Onsala DBBC2 #2 (ADB2) is using V107 beta3 (version of 2019 January) because beta5 might crash. The latest beta 5 in the eVLBI session was tried when it was released. One of the board somehow got dead after running for a few hours and fringes went away. Morever, we notice that the bad total power readouts of zero are almost always associated with BBCs from the 2nd board, i.e. BBCs 5–8 in form=astro mode or BBC 9-12 in form=astro2 mode. During the 3mm GMVA session (4 Gbps with 64 MHz filters), we noticed some transient bad sampler statistics (completely lost magnitude bits) from BBC #5 USB and LSB. Interestingly, the two problems are rarely seen in the first four BBCs.

EVN Session 2/2020

Fringes to the Onsala 20 and 25m radio telescopes were again found in all the NMEs. The 1-hour experiment ED045C was missed because of the late start. The ToO observations of RZ001B was not performed because of no signal power from the receiver. All the observations were carried out remotely by Jun Yang and Franz Kirsten.

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