

29th April 2021 – Online Meeting

Report on VLBI Operations for Jodrell Bank Observatory

1. February/March 2021 Session

The February/March 2021 session for JBO consisted of 26 experiments; 8 at 18/21cm, 8 at 6cm and 10 at 1.3cm. Fifteen of these were joint EVN+e-MERLIN observations. At 18/21cm, 76h of observations were performed on the Lovell telescope and 10h on the Mk2 telescope, with no reported data loss. At 6cm, 57h of observations were performed with the Mk2 telescope, also with no reported data loss. At 1.3cm, 75h of observations were scheduled on the Mk2 telescope. Here, one entire experiment (EC071K) was not observed due to high winds, one experiment was not observed (EB084) due to a critical failure of the antenna control network and one experiment was not observed (EB064J) due to failure of the Rx cryogenic system. A further 0.5h were lost due to a local LO control issue. At 1.3cm there was a total of 28.5h (38%) of time lost. In summary, 218h of observations were scheduled on JBO telescopes (142h on Mk2 and 76h on Lovell) with 28.5h (13.1%) data lost, i.e. a success rate of 86.9%.

2. Technical Developments

Our FiLa10G continues to operate without any problems after recent work on badly crimped connections on the wires going from the 3.3V PSU to the terminal block. Flexbuff2 (used mainly for e-MERLIN VLBI data) has a number of faulty drives, so funds are being sought to replace the original drives remaining in the unit. The Raid cards fitted do not work well in JBOD mode, however, this may be fixable with a firmware change. If successful then it will be repeated on flexbuff3 which also has the same Raid cards. Both machines will then be reconfigured to JBOD the same as flexbuff1. Funding is also being sought for another 360TB flexbuff. The low amplitude ripple of approximately 0.2MHz in the Mk2 left polarisation bandpass is still to be investigated. It is quite likely that it is the same fault that occurred in the other polarisation a couple of years ago. We have a spare module and which will be swapped it as soon as possible. Testing and replacement requires staff on-site which is currently limited by COVID-19 restrictions. The current FS PC is old and is beginning to show signs of failure. A specification now exists for a replacement and will be purchased soon. We expect to receive funding soon for purchase of a DBBC3-2L2H unit.

Alastair Gunn, Les Parry