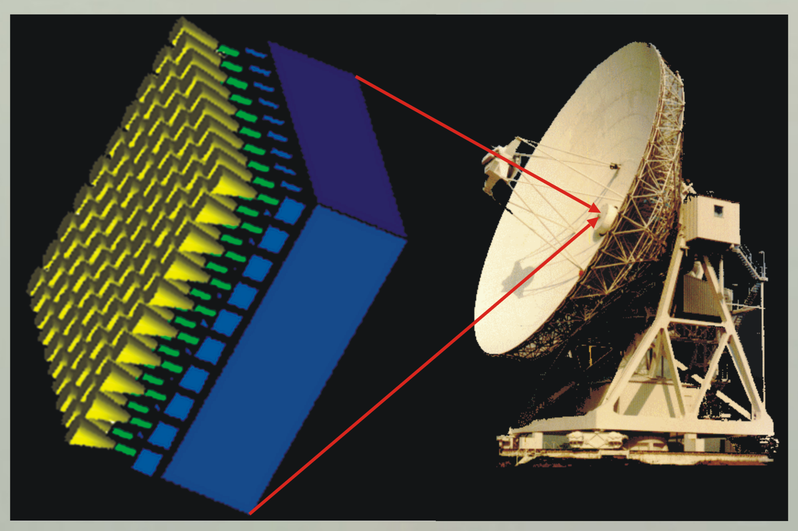
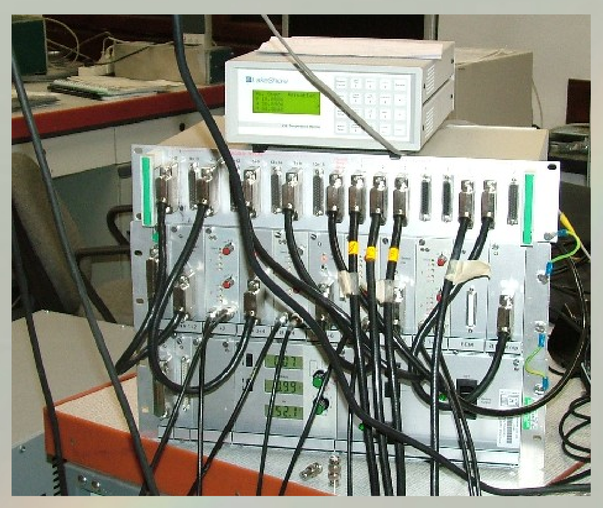
Implementation of the OCRA-f receiver on the Torun 32m antenna

R.Feiler, M. P. Gawronski, A. J. Kus, B. Pazderska, E. Pazderski - Torun Centre for Astronomy, I. W. A. Browne, R. Davis, D. Kettle, S.R. Lowe, M.Peel, P. N. Wilkinson - Jodrell Bank Centre for Astrophysics, A. Alareedh, M.Birkinshaw, K. Lancaster - University of Bristol



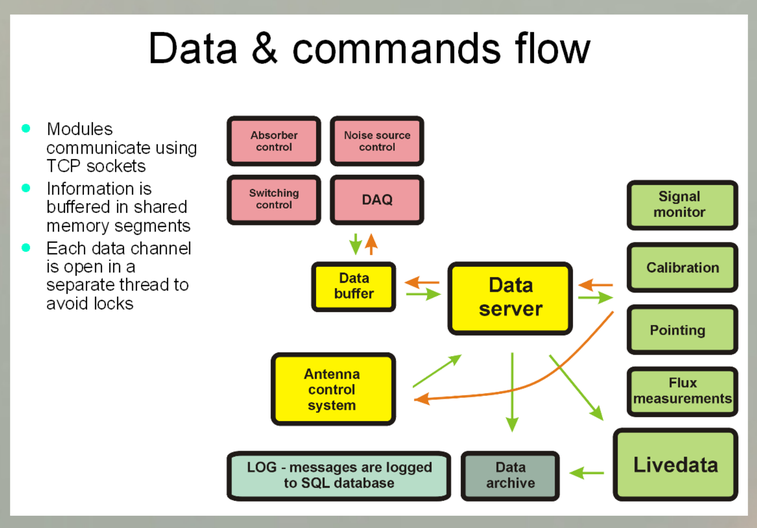
OCRA - One Centimetre Radio Array.
The idea is shown on the above picture. It is a matrix of NxM receivers, where N=1 and M=2 for prototype OCRA-p, N=4 and M=4 for OCRA-f actually implemented, N=10 and M=10 for (we hope) final OCRA. Receivers are grouped in pairs ("foxtrot" design). The overall bandwidth: 26 to 36 GHz (27 to 33 GHz for OCRA-p). Typical system temperature is 40 K.

OCRA-f receiver has 16 feeds - 8 receiver channels are active now. Picture shows lab tests for checking the quality of the front window.

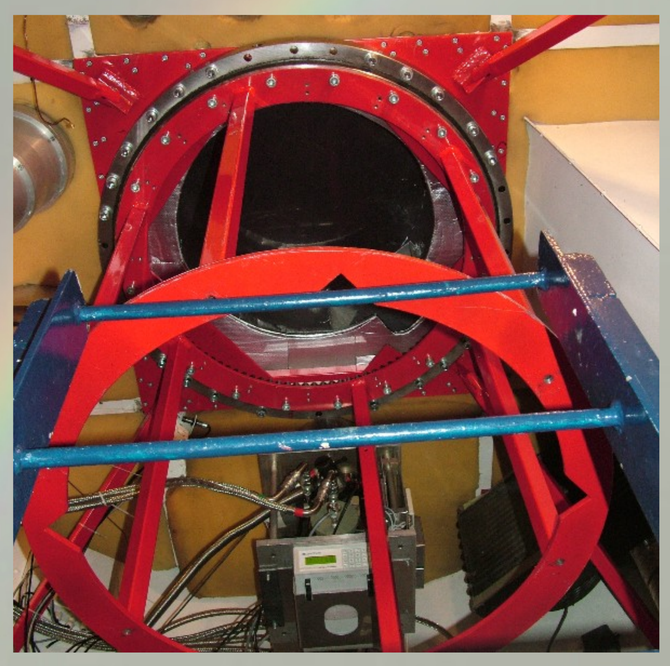


Temperature monitor, power supply and bias monitoring system for OCRA-f

Data Acquisition System and pressure meters

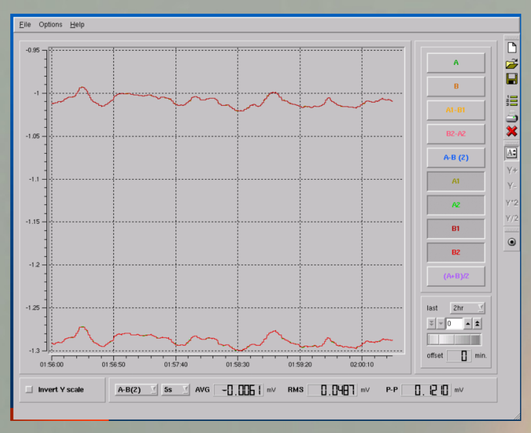


The software is currently in use for OCRA-p observations. Extensions for OCRA-f are under development.

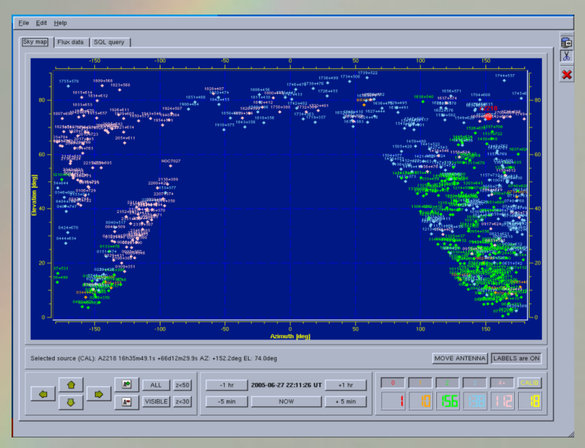


Field rotator for OCRA-f mounted on the 32m antenna

Lenze drive and motor for field rotator

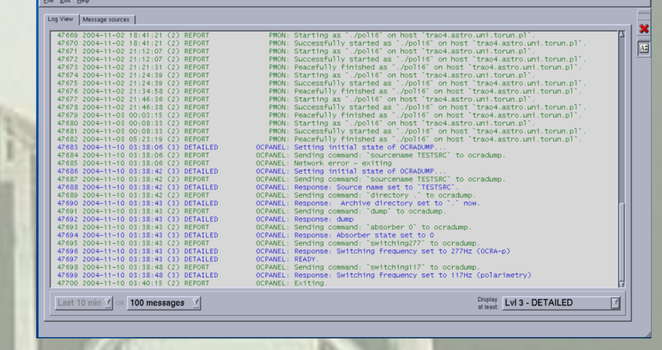


Signal monitoring window

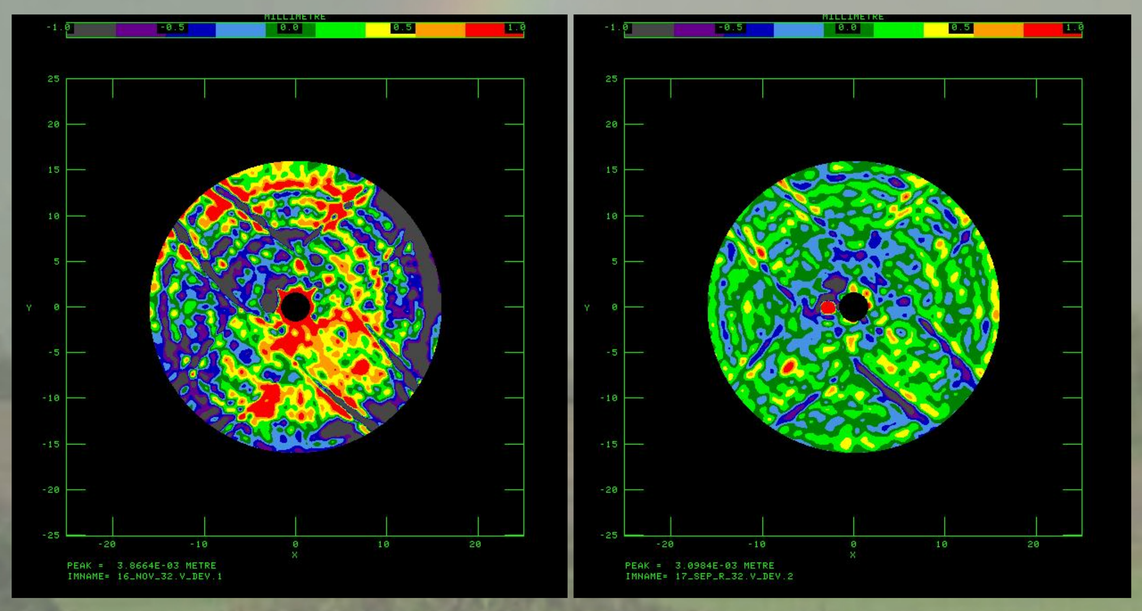


Source & survey database

Tsys measurement window



Log viewer



The telescope aperture efficiency was significantly improved using holographic measurements. Tracking and pointing will be greatly influenced by installing new 28-bit encoder seen on the right picture. Work on the new control system is in progress.