OAN - Yebes station report – January 2011

VLBI Equipment

No changes on the Mark 5B, VLBI terminal, PC-EVN.
The dBBC was tested locally and was uploaded the latest firmware. It apparently works correctly. Some tests involving telescopes are being performed between January 17th and 20[th.]

Field System

No changes since last TOG report: we are still running 9.10.4 on a Debian Lenny host. Installation was not standard.

VLBI observations

Astronomy observations (traditional and eVLBI) are performed unattended and checked remotely since we have no operators at the telescope. This posed a problem once in an eVLBI session due to a failure in the ACU hardware.

40m radiotelescope

On summer we investigated the behaviour of the subreflector as a function of elevation and its impact on pointing and gain. A new model has been applied that should improve the telescope operation.

On summer the surface of the 40m was adjusted by touching the screws that support the panels. The improvement of the gain is almost negligible at frequencies below 22 GHz. More holography observations have been performed in December 2010 and a new series of adjustments has started in 2011.

A new C Band receiver has been installed at the telescope. The polarizer is cooled and it is connected to the horn via a waveguide that uses a window which isolates the cryostat from outside. The noise temperature has dropped to 35 K approximately.

Two new backends are being used since last summer in single dish observations: an 8 channel continuum detector, and an 8 module FFT spectrometer.

The continuum detector is a PocketBackend on loan from MPIfR that uses the analog signal from the 4 wideband IF detectors of the VLBA terminal.

The FFT can be loaded with 4 different configurations. Currently we have 2 modules with a bandwidth of 100 MHz, 2 with a bandwidth of 500 MHz, 2 with a bandwidth of 750 MHz and 2 with a bandwidth of 1000 MHz. The three first couples use 16384 channels and the latter 8192 channels. Both backends are remotely controlled and monitored using ethernet and have been integrated in the control system of the 40m telescope.

Pablo de Vicente