Observatorio Astronómico Nacional – Yebes

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Abstract

This report updates the description and details of the OAN facilities as a network station in IVS. The 14 meter radiotelescope at Yebes participates regularly in the geodetic VLBI campaigns (EUROPE and IVS), as well as astronomical VLBI experiments as part of the European VLBI Network (EVN). The institute staff is also involved in technical development and geodetic research.

1. General Information: The OAN Facilities

The Observatorio Astronómico Nacional (OAN) of Spain, which is a department of the Instituto Geográfico Nacional (IGN, Ministerio de Fomento), operates a 14 meter radiotelescope at Yebes (Guadalajara, Spain). This facility is a network station in IVS, and participates regularly in the geodetic VLBI campaigns to study the tectonic plate motions in Europe (project EUROPE), Earth rotation, and pole motion.

The characteristics of the 14-m radiotelescope and a photograph are available in the 1999 IVS Annual Report, and a map of the Yebes site is in the report for year 2000.

The institute is currently involved in the construction of a new 40 meter radiotelescope which is expected to be available for geodetic VLBI observations in 2004. Progress can be followed at the web address `http://www.oan.es/cay/40m/`.

2. Description of the OAN Station at Yebes

The main instrument at OAN is nowadays the 14 meter radio telescope used for VLBI. The most important changes in the equipment since the last IVS Annual Report in 2001 have been the construction of a new cryostat for the S/X receiver (which makes possible to keep cooled the receiver during many weeks), the upgrade of the field system software, together with remote control and diagnostics of the receiver and other equipment.

3. OAN Staff Working in VLBI

Table 1 lists the OAN staff which are involved in the VLBI studies, some of which can be found at the telescope (CAY) address. The associated members of IVS are indicated with an asterisk. Contact information is provided at the URL `http://www.oan.es/vlbi/`. The VLBI activities are also supported by other staff like receiver engineers, computer managers, secretaries and students.

4. Status of the Geodetic VLBI Activities at OAN

The main contribution of OAN to IVS is the realization of geodetic VLBI observations in the EUROPE and IVS projects: the OAN radio telescope at Yebes has participated in three EUROPE and three IVS experiments in 2002. The institute also participates in the European VLBI Network (EVN) for astronomy, taking part in its logistics and carrying out technical development.

Table 1. Staff in the OAN VLBI group (Email: **vlbi@oan.es**).

Name	Background	Role	Dedication	Address
Jesús Gómez–González*	Astronomer	General Subdirector	10%	IGN
		for Geodesy and Geophysics		
Rafael Bachiller	Astronomer	Director	10%	OAN
Alberto Barcia	Engineer	Chief engineer	10%	CAY
Francisco Colomer*	Astronomer	VLBI Project coordinator	30%	OAN
Pablo de Vicente*	Astronomer	VLBI Technical coordinator	30%	CAY
Isaac López–Fernández	Engineer	Technical support	20%	CAY
Maria Rioja*	Astronomer	Geodesy researcher	20%	OAN
Jean–François Desmurs	Astronomer	Support	10%	OAN
Valentín Bujarrabal	Astronomer	Astronomy coordinator	5%	OAN
Rebeca Soria	PhD student	Support	10%	OAN

5. Future Plans

The OAN radio telescope at Yebes continues participating regularly in the campaigns for the EUROPE and IVS projects.

The construction of a new 40 meter radiotelescope at Yebes is progressing well. The erection is expected in August 2003. This telescope is expected to be operational at S/X bands in 2004.

References

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[4] P. de Vicente: "Instalación y configuración del software para el ordenador de control del terminal VLBI del CAY", Informe Técnico OAN 2002-6

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[6] P. de Vicente, C. Almendros, J.A. Abad: "Inserción y cableado del formateador y del decodificador MKIV en el terminal VLBA4 del CAY", Informe Técnico OAN 2002-8