

Sheshan VLBI Station Report for 2011

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Abstract

The Sheshan VLBI station (also named SESHAN25 in the geodetic community) is located at Sheshan, about 30 km west of Shanghai. A 25-meter radio telescope is in operation at 1.3, 3.6/13, 5, 6, and 18-cm wavelengths. The Sheshan VLBI station is a member of the IVS and EVN. The SESHAN25 telescope takes part in international VLBI experiments for astrometric, geodetic, and astrophysical research. Apart from its international VLBI activities, the telescope spent a large amount of time on the Chinese Lunar Project, including the testing before the launch of the Chang'E-2 satellite and the tracking campaign after the launch of Chang'E-2.

1. General Information

The Sheshan VLBI station ('SESHAN25') is located at Sheshan, 30 km west of Shanghai downtown. It is hosted by the Shanghai Astronomical Observatory (SHAO), Chinese Academy of Sciences (CAS). A 25-meter radio telescope is in operation at 1.3, 3.6/13, 5, 6, and 18 cm wavelengths. The Sheshan VLBI station is a full member of the IVS and EVN. The SESHAN25 telescope takes part in international VLBI experiments in astrometric, geodetic, and astrophysics research. Apart from its international VLBI activities, the telescope spent a large amount of time on the Chinese Lunar Project, including testing observations and the tracking campaign of Chang'E-2.

2. VLBI Observations in 2011

In 2011, SESHAN25 participated in 30 IVS sessions (including six INT3 Intensive sessions). SESHAN25 also participated in the EVN sessions in February, June, and October. We missed the IVS session T2077 because of an antenna motor problem. In order to participate in the Chinese Chang'E-2 Lunar Project, SESHAN25 has observed the Chang'E-2 satellite with long term routine VLBI tracking model for two or three days per week. We also missed the IVS sessions of RD1103 and R1479 during the Chang'E-2 tracking task.

3. Development and Maintenance of Sheshan Telescope in 2011

A new analog VLBA Terminal, which included a VLBA sampler and a VSI-C card together with a Mark 5B recorder, worked normally in our station. We solved the sampling status problems of 1 bit and 2 bit sampling respectively. After upgrading, we successfully participated in the EVN session 3 and two IVS sessions (R1512 and R1513).

We have upgraded the Mark 5A Firmware Version to 12.13 (APT 10.07, SDK 8.2). We also upgraded the Mark 5B Firmware Version to 12.06 (APT 10.07, SDK 8.2).

We also performed routine maintenance of our antenna in May of 2012.

4. The Staff of the Sheshan VLBI Station

Table 1 lists the group members of the Sheshan VLBI Station. The staff are involved in the VLBI program at the station with various responsibilities.

Table 1. The staff of the Sheshan VLBI Station.

Name	Background	Position & Duty	Contact
Xiaoyu Hong	Astrophysics	Director, Astrophysics	xhong@shao.ac.cn
Qingyuan Fan	Ant. control	Chief Engineer, Antenna	qyfan@shao.ac.cn
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Zhuhe Xue	Software	Professor, FS	zhxue@shao.ac.cn
Quanbao Ling	Electronics	Senior Engineer, VLBI terminal	qling@shao.ac.cn
Bin Li	Microwave	Technical friend, receiver	bing@shao.ac.cn
Tao An	Astrophysics	Astrophysics	antao@shao.ac.cn
Bo Xia	Electronics	VLBI friend, VLBI terminal	bxia@shao.ac.cn
Hong Yu	Ant. control	Associated Professor, Antenna	yuhong@shao.ac.cn
Li Fu	Ant. mechanics	Engineer, Antenna	fuli@shao.ac.cn
Jinqing Wang	Electronics	Engineer, Antenna	jqwang@shao.ac.cn
Lingling Wang	Software	Engineer, VLBI terminal	llwang@shao.ac.cn
Rongbing Zhao	Software	Engineer, VLBI terminal	rbzhao@shao.ac.cn
Weiye Zhong	Microwave	Engineer, Receiver	wyzhong@shao.ac.cn
Wei Gou	Electronics	Engineer	gouwei@shao.ac.cn
Linfeng Yu	Electronics	Engineer	lfyu@shao.ac.cn
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Jian Dong	Ant. Control	Engineer	dongjian@shao.ac.cn

5. Outlook

In 2012 the Sheshan radio telescope will take part in 13 IVS sessions and 2 EVN sessions. The telescope will regularly monitor the Chang'E-2 satellite in its lunar orbit for 2-3 days per week in 2012.