

Quasar VLBI network

Stations report for the TOG meeting

Period 2014/01 - 2014/10

1. General Information

Quasar VLBI network is a part of the Institute of Applied Astronomy (IAA) and includes three stations: Badary (Bd), Svetloe (Sv) and Zelenchukskaya (Zc). These stations are equipped with a 32-m fully steerable radiotelescopes. During the reporting period in all Quasar stations the standard maintenance work with servo, receivers and cryogenic systems were carried out. Technical improvements and problems are presented below by topics.

2. Antenna

A number of tasks to improve the antenna design were carried out at all Quasar radio telescopes.

Geodetic measurements on local network were conducted in Zc. Geodetic measurements on RT-32 were carried out in Bd (May), Sv (3-14 September) and Zc.

The restoration of corrosion-resistant paint on antenna were conducted in Bd (June-August) and started in Zc in September.

3. Receivers

All Quasar radio telescopes RT-32 are equipped with receivers in the next bands: L, C, S/X and K.

Replacement of K-band one-channel frontend on the new two-channel unit at Sv is finished in 2013 March. Such a new unit waiting in Bd for installation.

The state of Sv C-band receiver RCP channel is unstable. C-band frontend was temporary replaced with a new uncooled unit with LNA. Repaired cooled unit of RCP channel is planned to restore in the first part of 2014.

4. Backends

From 2012 February the IAA data acquisition systems R1002M is fully functional at all Quasar stations and using in all VLBI observations, including IVS, EVN, RadioAstron and domestic programs.

5. Recording system

The Mark5B+ is the data recording system at all Quasar stations.

6. H-masers

Since July 2011 the new Active Hydrogen Masers VCH-1003M were put into operation in all stations of the Quasar network. The H-maser VCH-1003M is a modern, high-performance maser with low phase noise option. It uses the latest technologies, including Stand-alone Auto Cavity Tuning (no external reference required), remote IP control, monitoring and self-diagnostics.

Another two Active Hydrogen Masers VCH-1005 (old models) are in reserve in Sv and Zc.

7. Disks

IAA provides 160 TB (20 packs of 8TB) for the EVN disk pool. No new disk packs for reporting period.

8. Field System

Release 9.10.4 is used at all Quasar stations.

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