

## Quasar VLBI network

### Stations report for the TOG meeting

2018 October 4-5, Granada, Spain

*Period 2018/03 – 2018/09*

#### **General Information**

Quasar VLBI network is a part of the Institute of Applied Astronomy (IAA) and includes three stations: Badary, Svetloe and Zelenchukskaya. These stations are equipped with a 32-m fully steerable radiotelescopes RT-32 marked as Bd, Sv and Zc respectively. Stations Zelenchukskaya and Badary are also equipped with a 13-m VGOS radiotelescopes marked as Zv and Bv. At present both new RT-13 are in test operation.

The inaugural ceremony of the third VGOS RT-13 radiotelescope in the observatory Svetloe was held on September 19th 2018 during All-Russian Radio Astronomy Conference (VRK-2018).

During the reporting period in all Quasar stations the standard maintenance work with antennas, servo, receivers and cryogenic systems were carried out. Technical improvements and problems are presented below by topics.

#### **EVN sessions**

Quasar VLBI network successfully took part to all experiments of EVN sessions 2018-2.

#### **Receivers**

All RT-32 Quasar radio telescopes are equipped with receivers in the next bands: L, C, S/X and K. At **Bd** the X-band LCP-channel and S-band LCP-channel receivers was recovered in June.

#### **Backends (no changes)**

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.

#### **Recording system (no changes)**

The Mark5B+ is the data recording system at all Quasar stations. At May 2014 Mark5B+ software was upgraded to SDK 9.3.

#### **H-masers (no changes)**

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.

## **Disks**

IAA provides 160 TB (8TB×20) for the EVN disk pool and 80 TB (10TB×8) for the Flexbuff for JIVE correlator.

## **Field System (no changes)**

Release 9.10.4 is used at all Quasar stations.

## **Personnel (no changes)**

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