



Russian VLBI Network QUASAR: from 2006 to 2011

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**In 2005 the Russian Academy of Sciences
has completed the development of the
VLBI Network QUASAR
created for solving problems
of positioning and time service.**

**The movie describes the current status
of the QUASAR project.**

(6^m 51^s)

Radio interferometric network "QUASAR"

Svetloe

Saint-Petersburg

Zolenchujskaya

Badary

At present the VLBI Network QUASAR participates on the regular basis in the following International and domestic observational programs:

Global Programs

IVS-R1, IVS-R4 Determination of EOPs with 10-15 days delay, NEOS and CORE continuation (since 2003)

IVS-Intensive Determination of UT1 with 5-7 days delay (2005)

IVS-E3 Determination of EOPs with the S2 registration system (2003-2006)

IVS-T2 Terrestrial reference frame, geodynamics (2003)

VLBA Radio sources mapping in collaboration with VLBA (2006)

Regional geodynamical program

EUROPE European region (2003)

Special programs

RDV IVS+VLBA Terrestrial reference frame, coordinates and structure of sources (2005)

IVS-R&D Operational testing (2005)

CONT Short - term variation of EOPs, baselines, and troposphere (2005, 2008)

Domestic programs

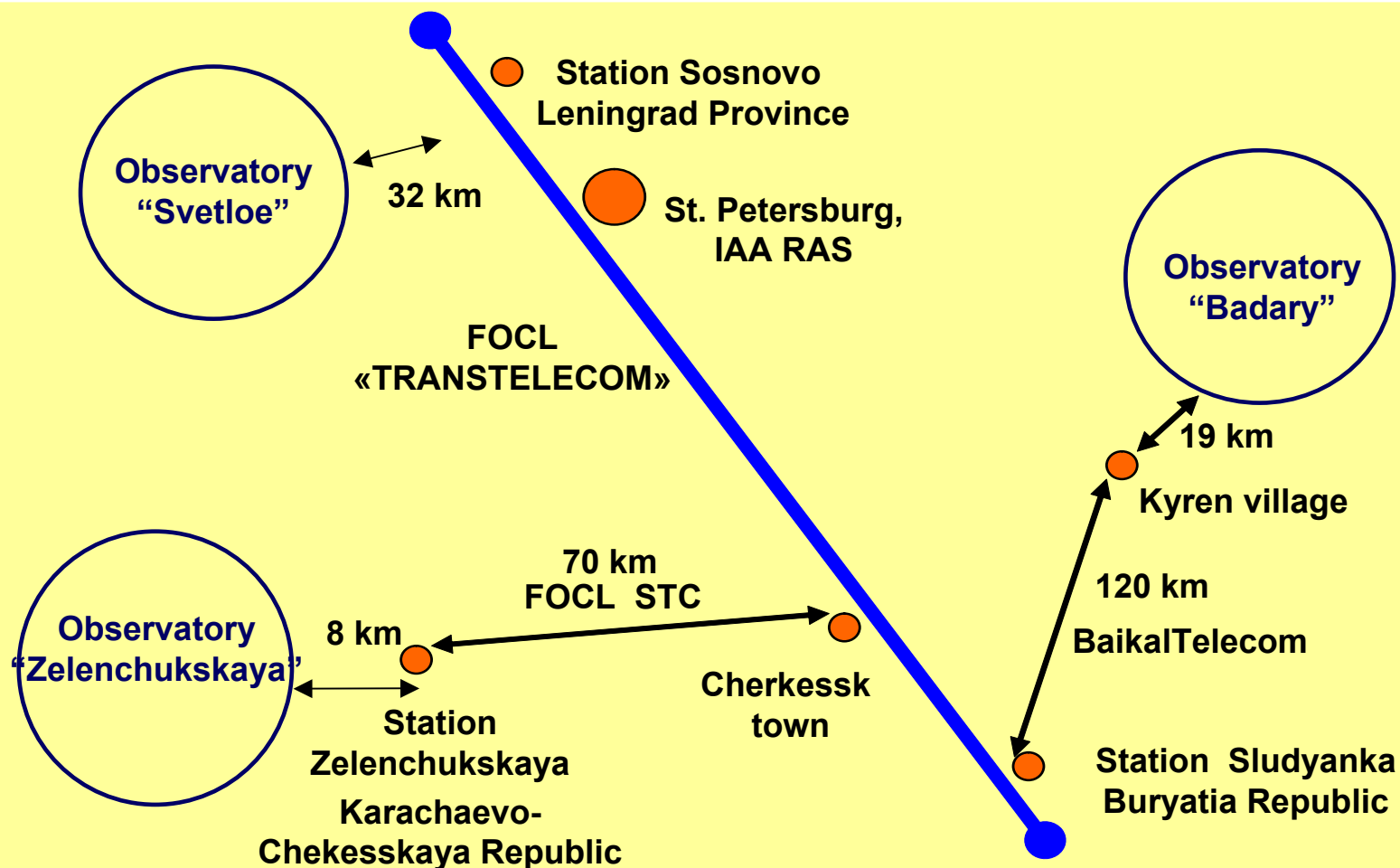
RU-E Determination of EOPs on the baselines “Svetloe”-“Zelenchukskaya”-“Badary” (2006)
(NGS-files are available at <ftp://quasar.ipa.nw.ru/pub/EOS/IAA/ngs>)

RU-U Determination of UT1 on the baseline “Zelenchukskaya”-“Badary” (2006)

RU-T Comparison of masers time scales (2006)

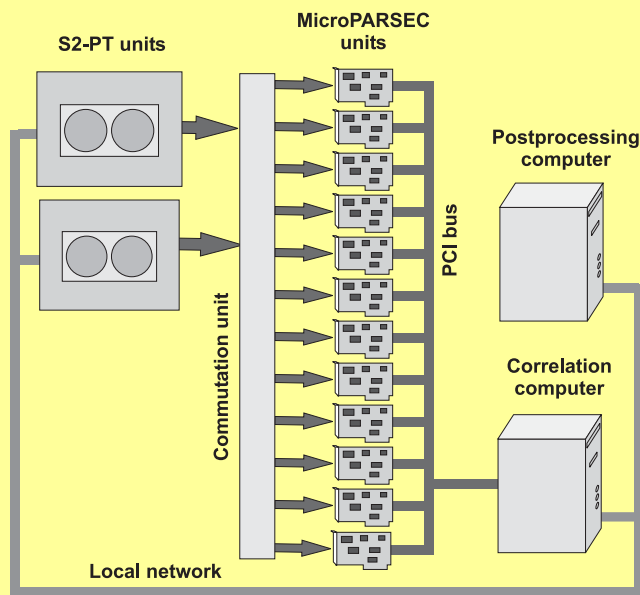
In 2008-2011 the QUASAR Network is to be upgraded in the following directions:

Connecting VLBI-stations by optical fiber lines and realization of e-VLBI mode

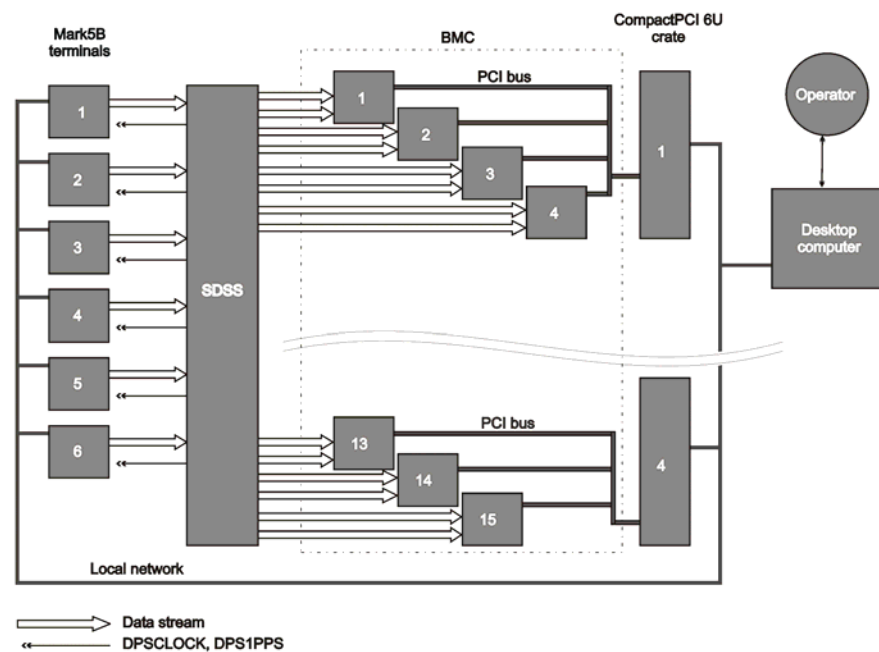


In 2008-2011 the QUASAR Network is to be upgraded in the following directions:

Developing the 6-stations correlator ARC on the basis of programmable logic chips



MicroPARSEC Correlator
Processing 24 frequency channels simultaneously



The ARC (Astrometric Radiointerferometric Correlator)
6-station correlator
Processing 15 baselines,
240 frequency channels simultaneously

In 2009-2011 the QUASAR Network is to be upgraded in the following directions:

Upgrade of RT-70 (Ussurijsk)



RT-70



Mark 5B



PC-Field System

**S/X band
Cryogenic Receiver**



**R1002 Data
Acquisition
System**



CH1-75 H-maser



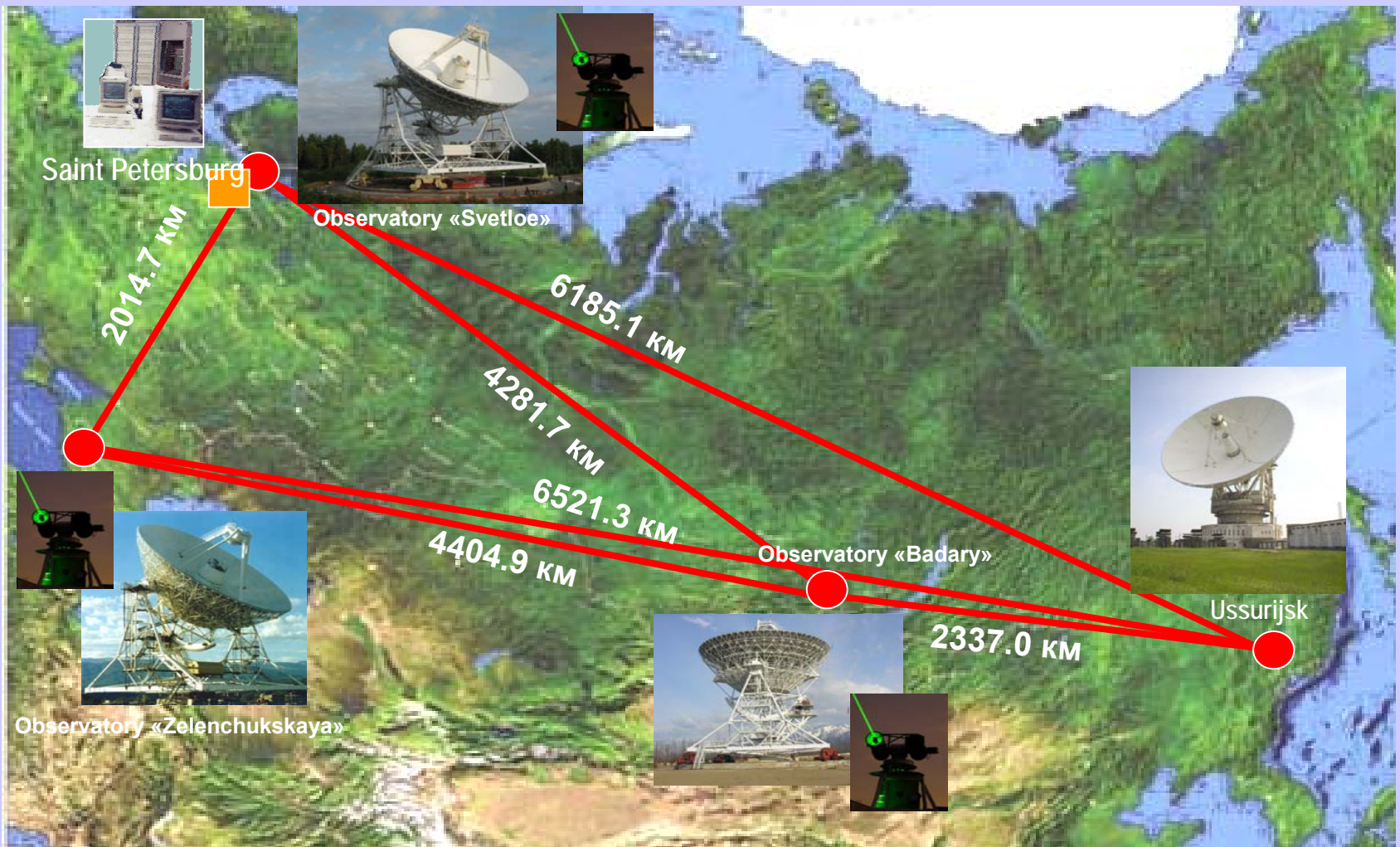
**GPS/GLONASS
receiver
(for time-transfers)**



**Phase Calibration
System (P-cal)**

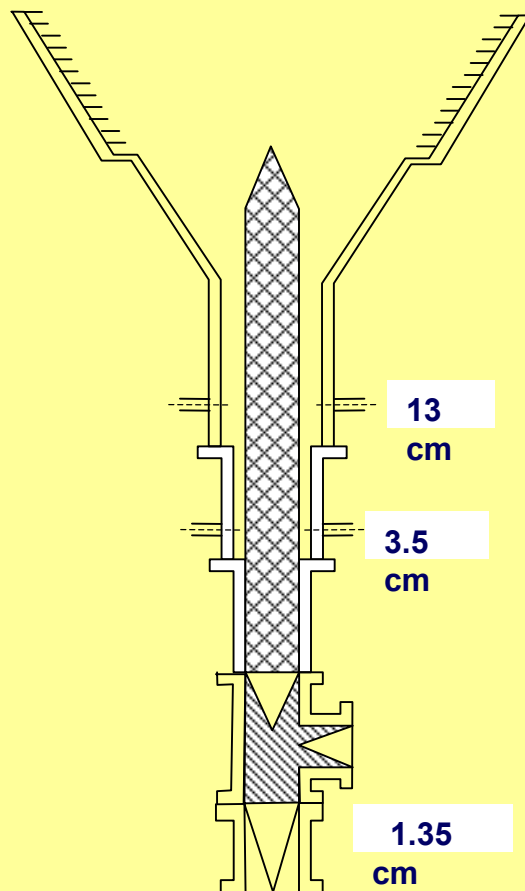


VLBI Network QUASAR and RT-70 - 2011



In 2008-2011 the QUASAR Network is to be upgraded in the following directions:

The uses the 13/3.5/1.35 cm wavelengths for solving problems of radio astrometry and space geodynamics



S/X/K Three-band Feed

The Nearest Future of VLBI Network QUASAR

1. Ground Based support of the «RADIOASTRON»

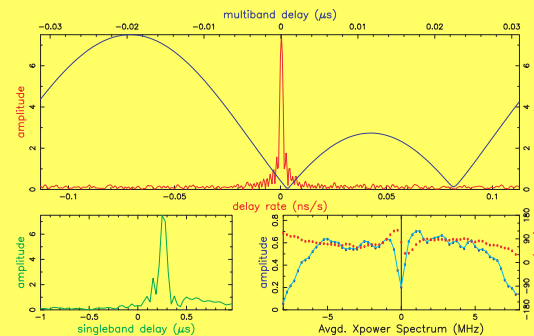
- test measurement 28 Sept. 2008, 6 and 18 cm
- Recording System – RDR-1
(Radioastron **D**igital **R**ecorder)



2. QUASAR and EVN

- test measurement on 3.5/13 cm - 16.06.08

(Effelsberg, Svetloe,
Zelenchukskaya, Badary)



- test measurement on 6 and 18 cm - 10.08.08

Thank you for attention!