

Institute of Applied Astronomy Technology Development Center

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Abstract

IAA TDC works on the base of Radioastronomy apparatus building Section of IAA. The field of IAA TDC includes the devices of receiving, recording and processing of radio signals on QUASAR dishes. Now it consists of two radio telescopes (Zelenchukskaya and Svetloe), Badary under construction.

1. 1999-2000 Activities

Zelenchukskaya Station. Two years ago we planned the hard work on the new dish. Really, we spend all time for this work. At this time the 18–21 cm, 13 cm, 6 cm, 3.5 cm and 1.35 cm receivers are mounted on the dish. Six cryogenic machines are installed too.

Svetloe Station. On this station continues the routine work for supporting receiving equipment in working status. Measurements of the radio-telescope parameters were carried out. Performance parameters of the Svetloe Station are given in Table 1.

Table 1. Performance parameters of the Svetloe Station.

Wave band cm	Frequency GHz	Polarization	r	$dish$	sys	SEFD Ja	cal
13	2.15–2.5	L	18.5	39.5	58	430	13.5
		R	42.5	37.5	80	600	35
3.5	8.18–8.68	L	17	26	43	300	1.2
		R	32	26	58	470	5.7

The investigations of pointing corrections were carried out using Field System software for automatic pointing measurements. Pointing corrections models for wave bands 3.5 cm and 6 cm were determined.

A new system of radiometrical recording was constructed by Prof. Koltsov's group. It is installed on the Svetloe dish and now is being tested.

We created an experimental prototype of an automatic control system for one channel of the receiver's complex. This system consists of:

- a personal computer;
- an interface between the computer and the receiver on a parallel channel LPT-port; this interface was developed in the laboratory;
- programs for checking and remote control.

To this moment this system passed the laboratory tests. In future we will plan to increase the system possibilities for the control of all 10 channels of receiving system of complex "Quasar".

Technical Staff of IAA TDC is stable and did not change.

2. Prospects

For the 2001-year we are planning:

1. To begin in Zelenchukskaya dish:
 - putting into operation antenna tracking control system;
 - the adjustment of reflector and feed system;
 - radio telescope performance parameters measurement.
2. Test VLBI observations on baseline Zelenchukskaya-Svetloe.