

# Zelenchukskaya Radio Astronomical Observatory

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## 1. Abstract:

This report briefly summarizes the observing activities at the Zelenchukskaya 32-m VLBI station during the year 2007.

## 2. General Information

Zelenchukskaya Radio Astronomical Observatory was founded by Institute of Applied Astronomy (IAA) as one of three stations of the Russian VLBI network QUASAR. The sponsoring organization of the project is the Russian Academy of Sciences (RAS). The Zelenchukskaya Radio Astronomical Observatory is situated in the Republic Karachaevo-Cherkessiya (Northern Caucasia) about 70 km south of Cherkessk, near to the Zelenchukskaya site (not far from the Radiotelescope RATAN-600). The geographic location of the observatory is shown on the IAA RAS Web site:

[http://www.ipa.nw.ru/PAGE/koi8-r/DEPOBSERV/rus\\_zel.htm](http://www.ipa.nw.ru/PAGE/koi8-r/DEPOBSERV/rus_zel.htm)

The basic instruments of the observatory are a 32-m radio telescope and technical systems for doing VLBI observations.



Figure 1. Zelenchukskaya Observatory.

Table 1. Zelenchukskaya Observatory location and address.

Longitude	41°34'
Latitude	43°47'
Zelenchukskaya Observatory	
Republic Karachaevo-Cherkessia	
357140, Russia	
ipazel@mail.svkchr.ru	

### 3. Technical and Scientific Information

The technical parameters of the radio telescope RT-32 and other Zelenchukskaya station equipment are presented in the 2005 Annual Report [1].

#### 3.1. Co-location with GPS

A GPS ASHTECH Z-X113 receiver with an ASH 700936D\_M antenna Dorne-Margolin/Choke Ring was installed at the observatory during 2006. Observed data are sent to BKG and IGS every hour.

### 4. Radio Telescope

- The antenna rail was reconstructed by adding a steel supporting construction and rebuilding the concrete under it (Figure 2).

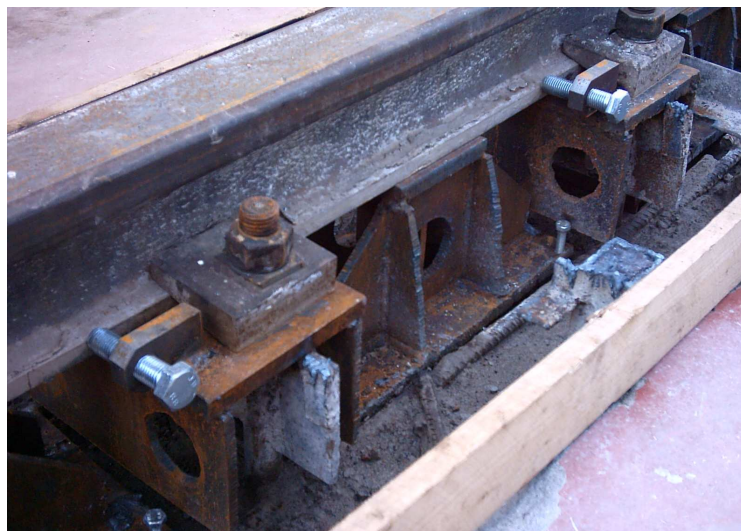


Figure 2. Steel supporting construction under the rail.

- The antenna structure was painted in August 2007 (Figure 3).



Figure 3. Painting of antenna.

## 5. Participation in the IVS Observing Program

Table 2 summarizes the sessions observed during 2007.

Table 2. List of IVS sessions observed at ZcRAO in 2007.

Month	IVS-R1	IVS-R4	EURO	R&D	VLBA
January	1	3			
February	1	3	1		
March		3			1
April	1	3			
May	1	1			
October		4		1	
November		4	1		
December	1	4		1	1
Total	5	25	2	2	2

During 2007 the Zelenchukskaya IVS station participated in a total of 36 IVS-R1, IVS-R4, EURO, R&D, and VLBA sessions.

## 6. Outlook

Our plans for the coming year are the following:

- Participation in IVS-R1, IVS-R4, IVS-T2, EURO, R&D, and VLBA observing sessions.
- Participation in the IVS CONT08 observing campaign.
- Participation in domestic observational programs for obtaining Earth orientation parameters.
- Putting into operation the cable length control system (“ground unit”).
- Upgrading the electronic part of the angle data unit.

## References

- [1] International VLBI Service for Geodesy and Astrometry 2005 Annual Report, NASA/TP-2006-214136, 154–157.