

Monitoring of Cherenkov Emission
Pulses from the Moon with Kalyazin
Radiotelescope: real sensitivity and
perspective program

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- General idea of Moon experiment
(by I. Zheleznykh)
and first calculations.

- Why not giant Pushchino radio-
telescopes?

DKR-1000 ($\lambda = 2.5 \text{ m} \div 1.0 \text{ m}$)

BSA ($\lambda \sim 3 \text{ m}$)

RT-22 ($\lambda \geq 0.8 \text{ cm}$)

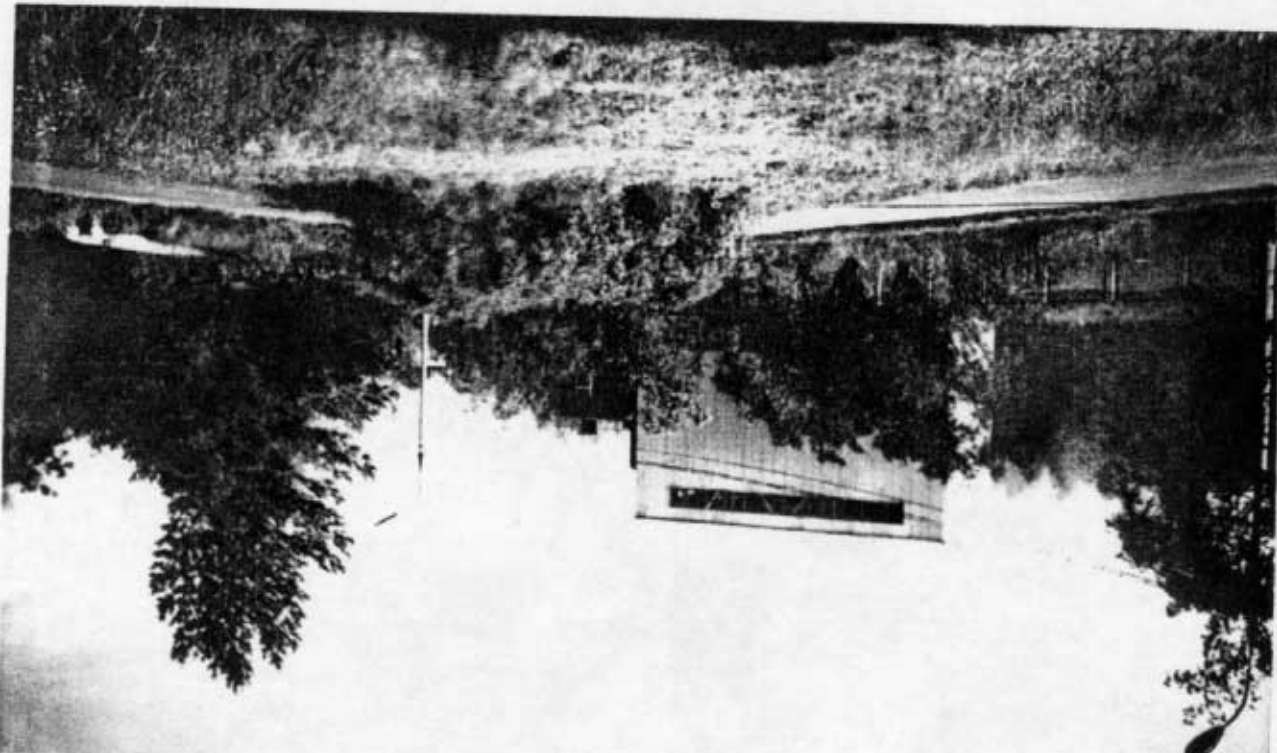
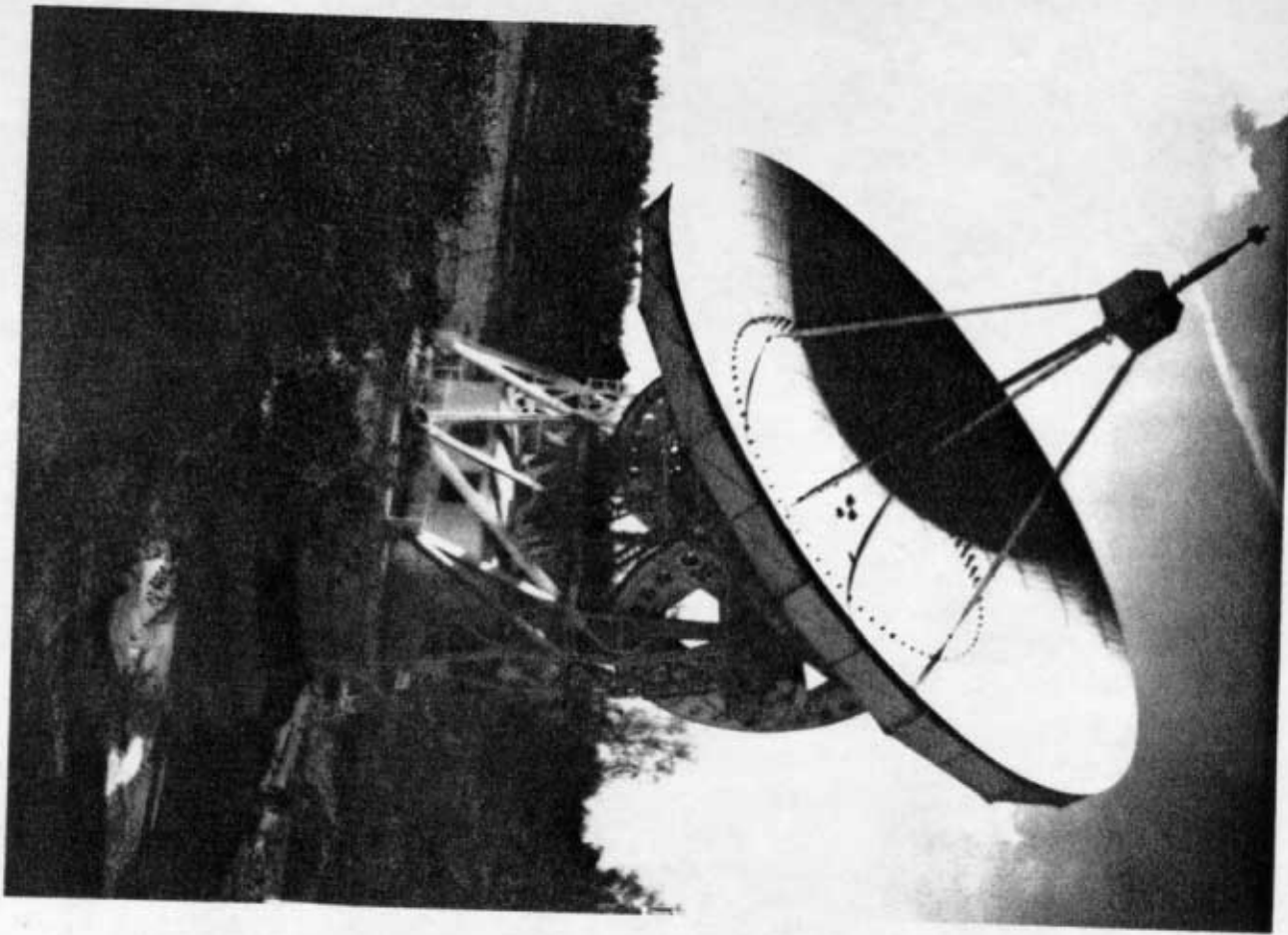
- About possible collaborations

- suggestion of on-board experiment

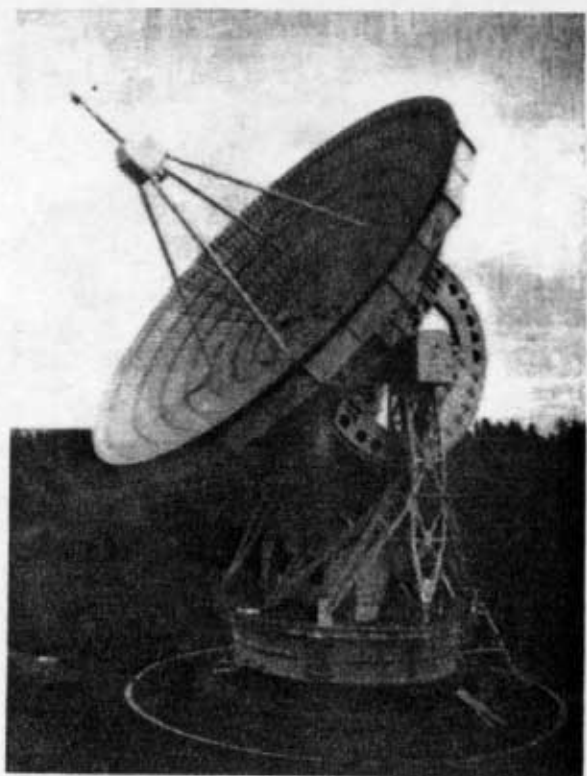
$$\text{SNR} \sim E_{\text{part}}^2 A_{\text{eff}} T_{\text{sys}}^{-1} D^{-2}$$

$$E_{\text{part}} \geq 10^{18} \text{ eV}$$

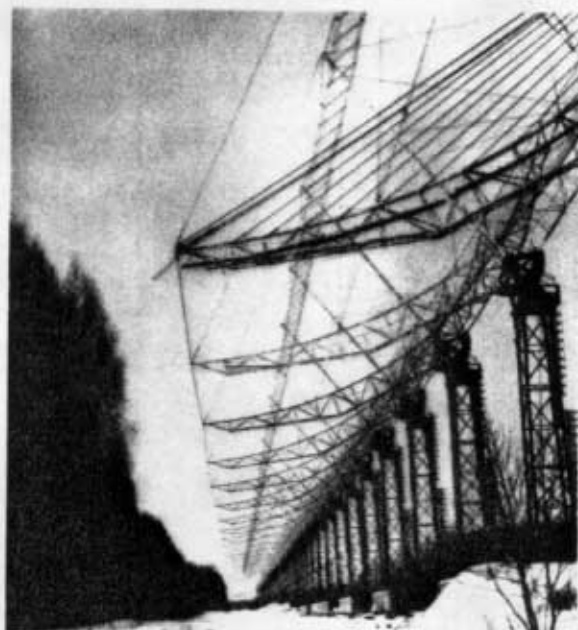
1
2
3



РАДИОТЕЛЕСКОПЫ ПРАО



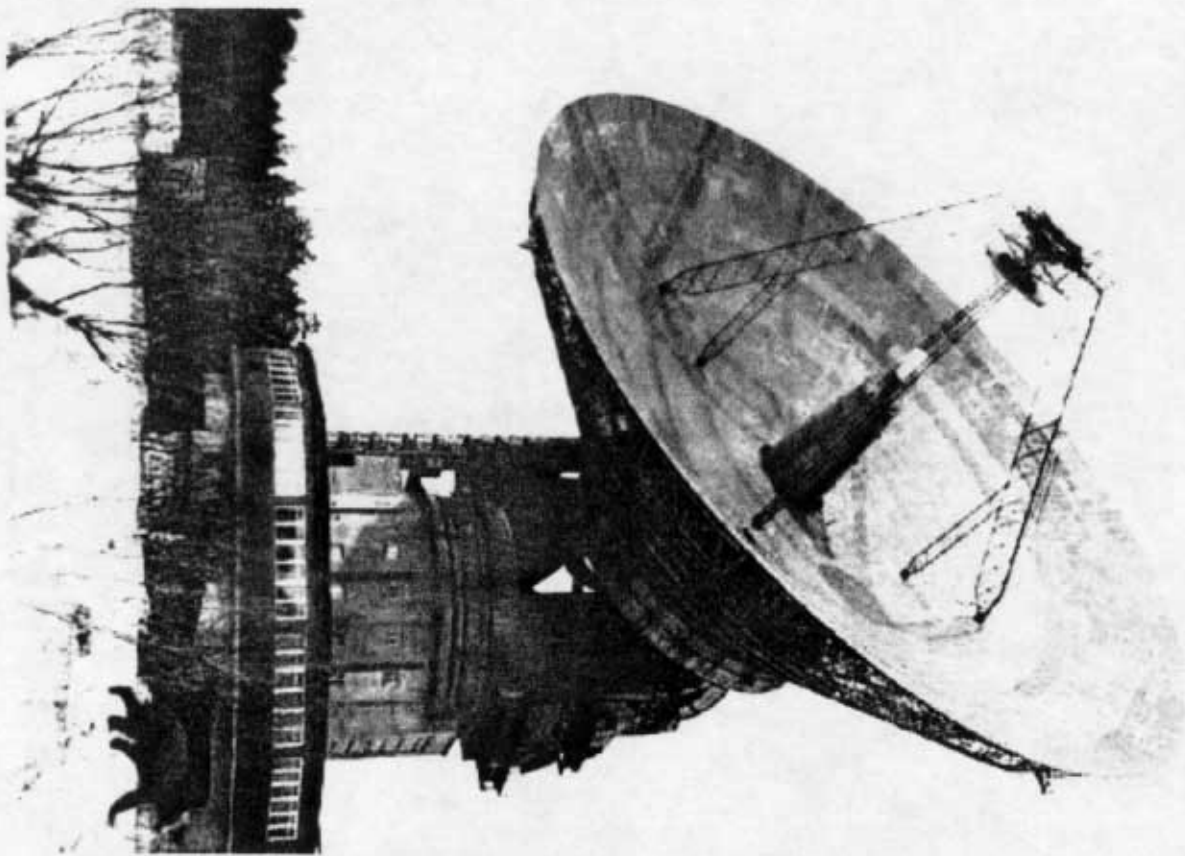
РТ-22

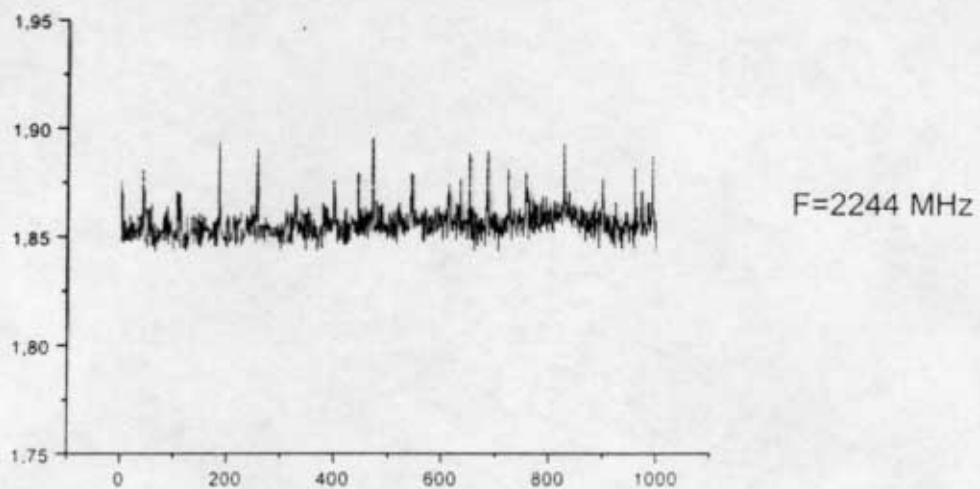
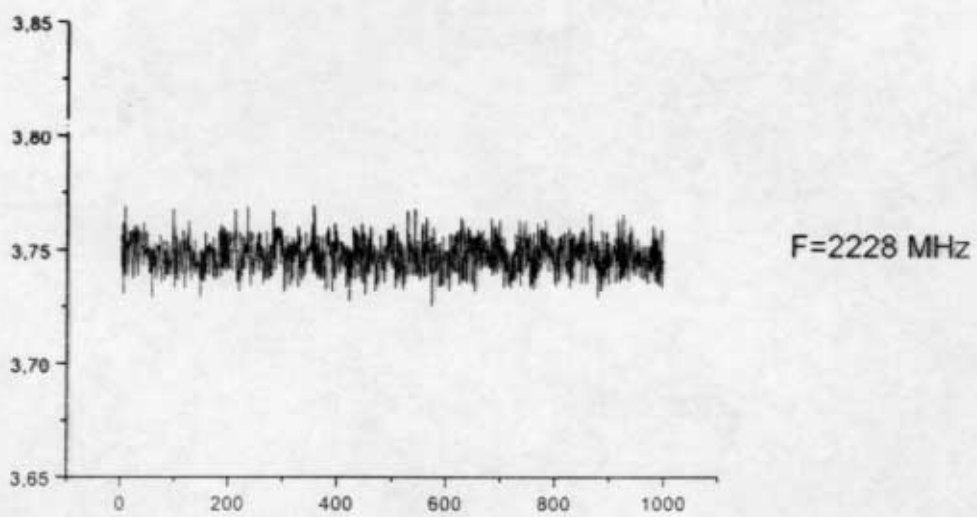
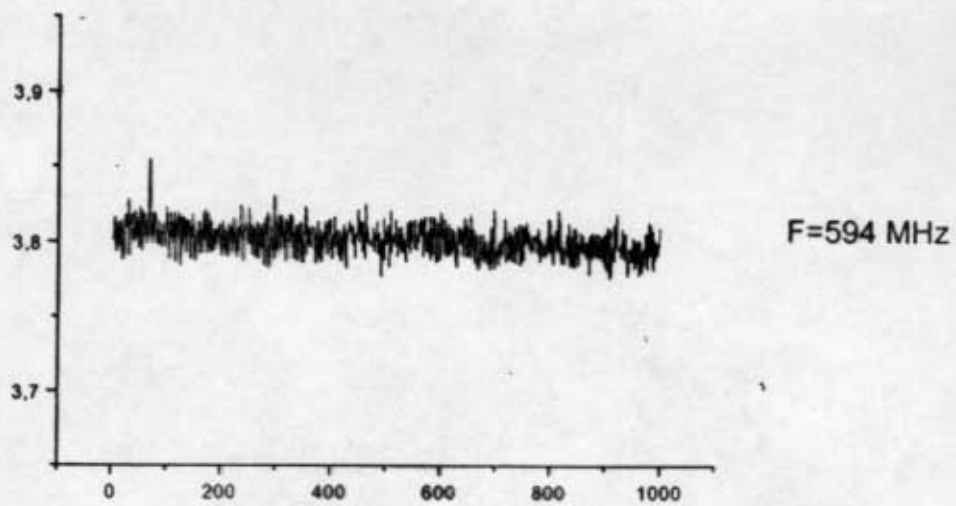


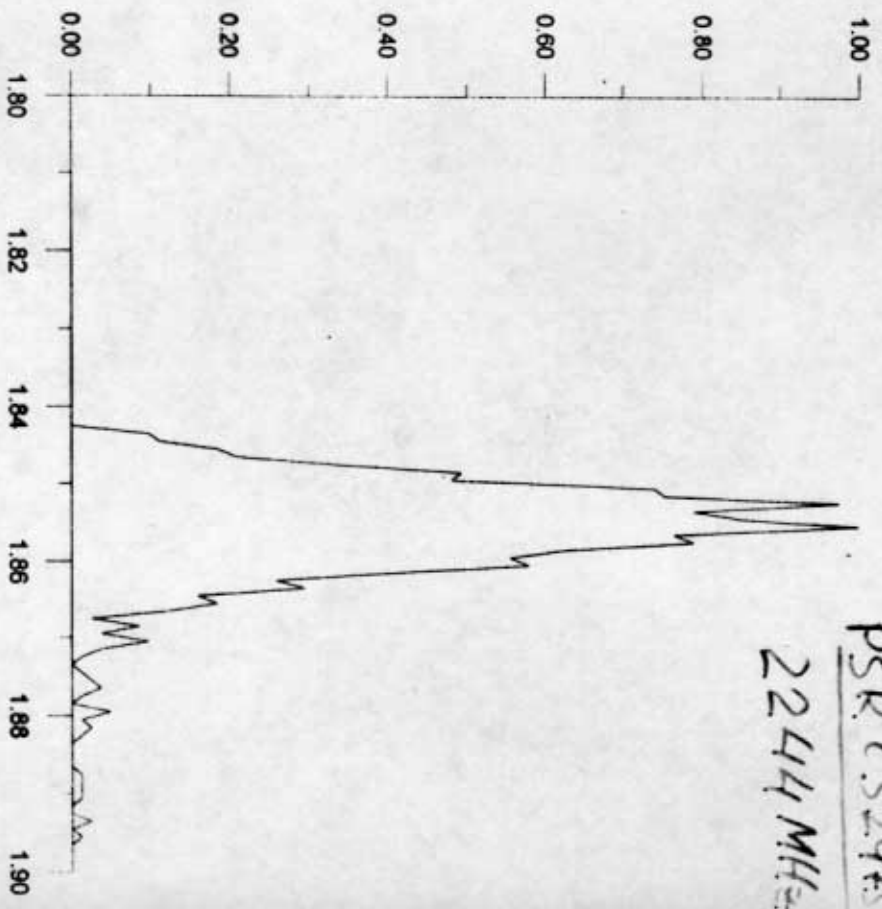
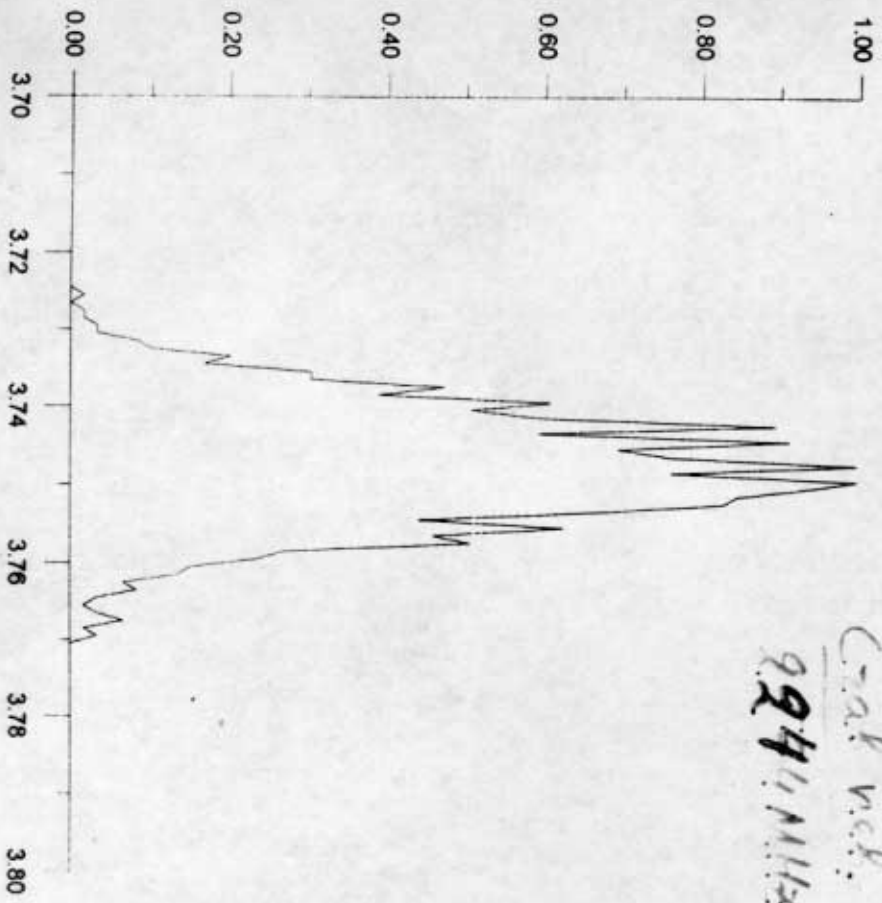
ДКР-1000



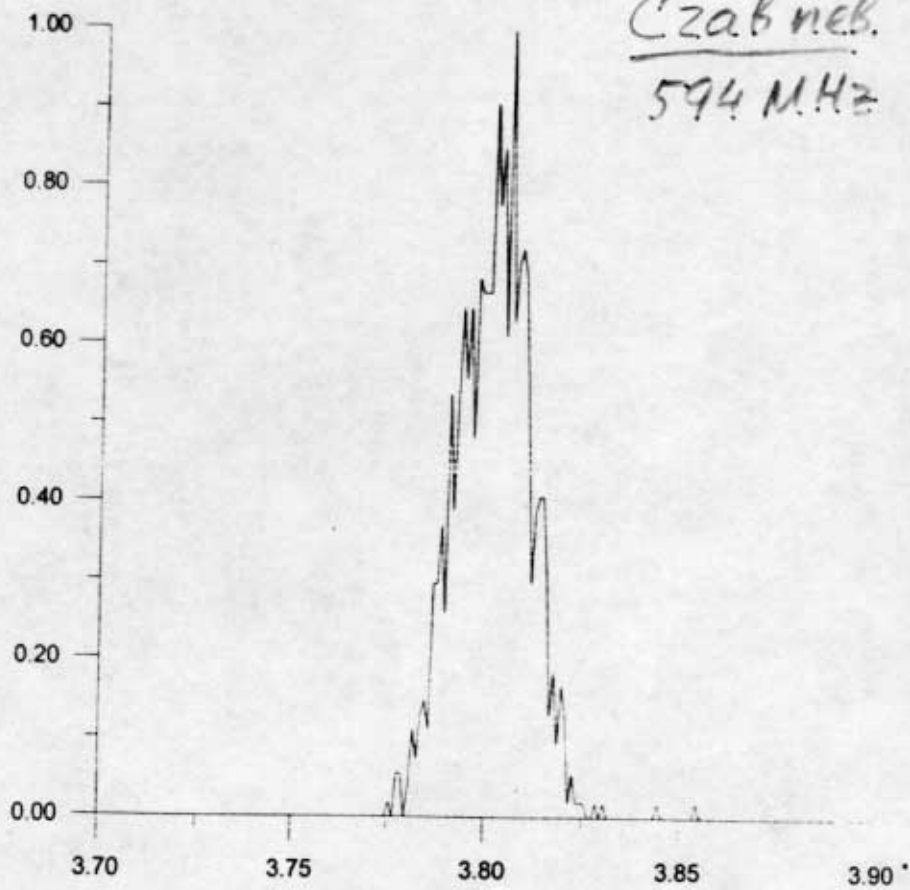
БСА







С'зав неВ.
594 MHz



- Parks experiment
(by T. Hankins, R. Ekers, Y. O'Sullivan)
- Goldstone experiment
(by P. Gorham, K. Liewer, C. Naudet)
- Papers about experiments
at Argonne and Stanford
accelerators
(by D. Saltzberg, P. Gorham et al.)

4 Kalyazin and Bear Lakes 64-meter radiotelescopes.

In Kalyazin:

- 5 x 2 channels receivers with LNA
(0.6; 1.4; 2.3; 4.8; 8.2 GHz)
- Modern time-frequency scanner
(2 H-standards, CFI receiver)
- STEC - station
- SO terminal

- Noises and interferences
at Kalyazin site

- no statistics
- a priori information about signal:
 - short duration
 - dispersion delay
 - polarization properties
 - wide-band (continuum) spectrum
 - anticorrelation with the signal outside of the Moon.
 - correlation in space
- we simply have to use several large radiotelescopes simultaneously !!

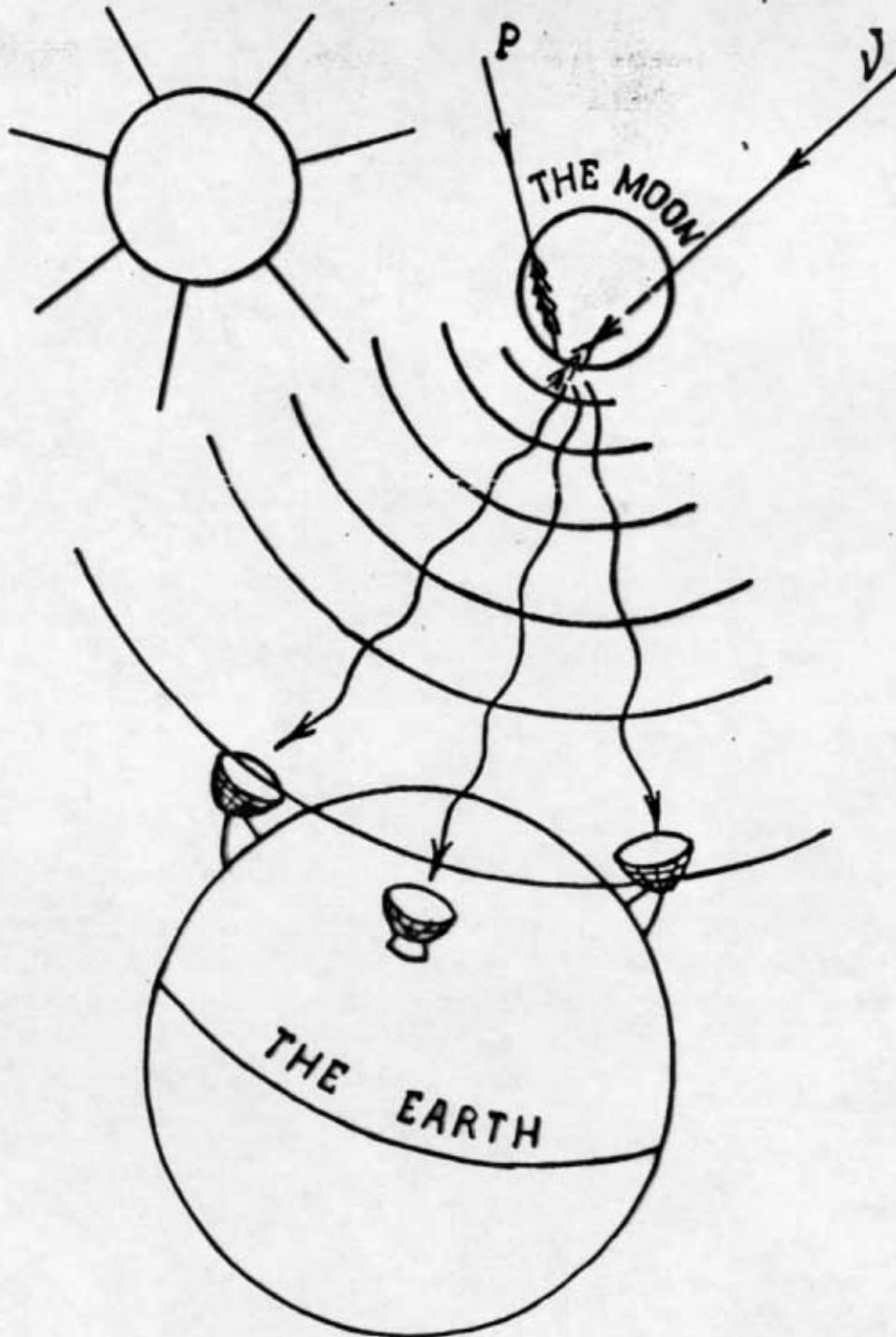


Fig.1 - A scheme of RAMHAND - Radio Moon Hadron and Neutrino Detection