

Yu. N. Pariiskii. *Preliminary Results of an Extreme-Depth Sky Survey at 7.6 cm.* The RATAN-600 radio telescope and a new 7.6-cm radiometer cooled by a closed-cycle helium machine have been used in an extremely deep survey of a narrow strip of the sky at declination $\delta_{1950} = 4^{\circ}53'$, $0 < \alpha < 24^{\text{h}}$. Several hundred radio sources of nature as yet unknown were recorded during twenty-four hours. Averaging of the data over a one-month cycle of observations brought out thousands of new objects. The curve of the number of sources plotted against flux density ($\log N - \log S$), which was constructed for the first time for flux ranges $0.86_m J$, $-15_m J$, showed an unusual "depression" with the approach to the level $1_m J$, (slope smaller than 0.3). The cause of the sharp decrease in the surface density of the weak radio sources remains unknown, although a simple approach to the "particle horizon" in Friedmann models of the Universe is sufficient to explain the behavior of the $\log N - \log S$ curve. In addition to the USSR Academy of Sciences, organizations of the Ministry of the Electronics Industry and the Ministry of Chemical Machinery took part in the experiment.

G. A. Smolenskii, V. V. Lemanov, A. B. Sherman, A. A. Dobrovolskii, Yu. M. Gal'perin, and V. P. Kozub. *Acoustoelectronic Interaction in a Piezoelectric-Secondary Electron System.* Experimental and theoretical research on the interaction of surfaced acoustic waves (SAWs) in ferroelectrics and piezoelectrics with secondary electrons produced above their surfaces is being pursued at the USSR Academy of Sciences Physico-Technical Institute. This is work in the field of acoustoelectronics—the division of solid-state physics concerned with study of the piezoelectric interaction of acoustic waves with free carriers. The acoustoelectronic interaction was at first studied for acoustic waves propagating in the volume of a piezosemiconductor, but later the research was extended to the case of SAWs, where extensive implementation of a proposal of Yu. V. Gulyaev and V. I. Pustovoit concerning the use of layered piezoelectric-semiconductor structures significantly broadened the usefulness of acoustoelectronics both in physical research and from an engineering-applications viewpoint. Study of the interaction of SAWs in a piezoelectric with secondary electrons produced in