

THE RADIO CATALOGUES OF NSS102 SURVEY AT 102.5 MHz (LSA OF LPI, RUSSIA) FOR ALL SKY ZONE OF OBSERVATION IN $-16^{\circ} \leq \delta \leq +82^{\circ}$, AND COMPARATIVE ANALYSIS WITH OTHER RADIO CATALOGUES

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ABSTRACT. In this paper we report the preliminary results of the total final processing of the entire radio survey observations. They made in 1991-93 by LSA of LPI that is full aperture radio telescope in the program survey of the northern sky at a frequency of 102.5 MHz. As a result, the whole sky was covered in declinations and produced radio sources catalog in $-16^{\circ} \leq \delta \leq +82^{\circ}$.

Key words: radio survey, catalogues, radio sources

In this paper we present a beta version of the complete catalog of all the observational data - about 10 000 sources with fluxes exceeding 3 Jy for all declination zone $-16^{\circ} < \delta < +82^{\circ}$. Only a part of the data (for declinations $+14,1^{\circ} \dots +33,5^{\circ}$ and $+60^{\circ} \dots +82^{\circ}$) published and reported previously.

The survey produced by 8-beams diagram of LSA with characteristic sizes HPBW in R.A. and declination:

$$D_{\alpha} = 47' \quad , \quad D_{\delta} = 24' \cdot \sec(Z)$$

In the paper observational methodic and processing algorithms and are described. Survey results are displayed in the form of the radio sources catalog, and the initial observation of the radio telescope scans with BSA, also as the isophotes of the observational data on the 102.5 MHz.

The preliminary version has 10187 sources with the fluxes more than 3 Jy. The numbers of radio sources with the fluxes:

- ≥ 4 Jy - 7597 sources,
- ≥ 5 Jy - 5738 sources,
- ≥ 10 Jy - 2629 sources

Extended sources represented by two-dimensional oriented Gaussians. Extended sources total number is 1992 sources. The number of radio sources with the scales:

- $\geq 10'$ - 1314 sources
- $\geq 20'$ - 1058 sources

$\geq 30'$ - 741 source

$\geq 1^{\circ}$ - 177 sources

The methods of processing of daily surveys in the mode of on-line, the first results of the identification with other radio catalogs, also as with catalogs of galaxies and quasars are discussed. According to the results of comparative analysis of cross-discussed data quality basic low-frequency catalogs: UTR (17-25 MHz), 8C (38 MHz), VLSS (74 MHz), 6C (151 MHz), Miyun survey (232 MHz) our catalogs has good flux scale as for pointed also as for extended sources.

Operating (not final) version of the catalog is available at PRAO ASC LPI:

http://astro.prao.ru/cgi/view_1.cgi?cat=nss102&mod=1

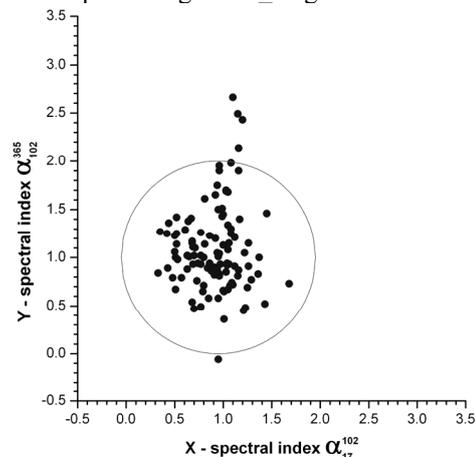


Figure 1: The example of radio sources identification in our data at 102 MHz, Txs data at 365 MHz and UTR data at 17 MHz. It represented by 2-dimensional spectral index diagram. The tail population points up are extended sources in Txs survey. NSS102 and UTR has good data agreement by small distribution spectral indexes on X.