

Identification of Faint Markarian Galaxies with IRAS Sources

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Abstract.

Identifications of IRAS sources with faint Markarian galaxies on the base of the Second Byurakan Survey were made. It is shown that about 30% of SBS galaxies are also IRAS sources. The list of newly identified objects is presented.

1. Identification of faint Markarian galaxies with IRAS sources

The Second Byurakan Survey (SBS) was aimed to reach fainter limiting magnitudes (Stepanian et al. 1990 and reference therein) in comparison with the FBS (Markarian 1967).

Between 1974 and 1991 a total area of 1000 square degrees of the sky was observed down to the limiting magnitude 19^m.5. This area is confined by the contiguous strip defined by $7^h40^m < \alpha < 17^h15^m$, $+49^\circ < \delta < +61^\circ$. A selection of nearly 1700 galaxies and about 1800 stellar objects with an excess ultraviolet emission is the main result of the SBS survey (Stepanian 1994).

Infrared data for nearly 500 SBS galaxies were obtained from the NED (*NASA/IPAC Extragalactic database*), IPSS (*IRAS Point Source Survey*) and IFSS (*IRAS Faint Source Survey*). About 50 SBS galaxies are newly identified with IRAS sources. The difference of coordinates less than 1' has been used for preliminary identification. The presence of optical objects has been analysed in the 1' circle with the centres of IRAS coordinates. Then the SBS galaxies as well as the other optical objects up to the limit of the Digitized Palomar Sky Survey which were located inside of this circle were analyzed.

The difference of coordinates for the above mentioned 500 SBS IRAS galaxies also may be used for preliminary identification. The plot of these differences is shown in Fig.1a, where nearly 80% of objects are inside of the box of 20". The similar plot for newly identified objects is shown in Fig.1b.

The use of 20" criteria for newly identified objects show that 25 objects may be identified as SBS IRAS sources. All these galaxies are the only nearest objects around IRAS sources. The remaining 25 SBS galaxies require additional identification.

So, the total amount of SBS IRAS galaxies contains 525 objects that compose about 30% of all SBS galaxies, 5% of these sources are newly identified. The list of these 25 objects is presented in Table 1.

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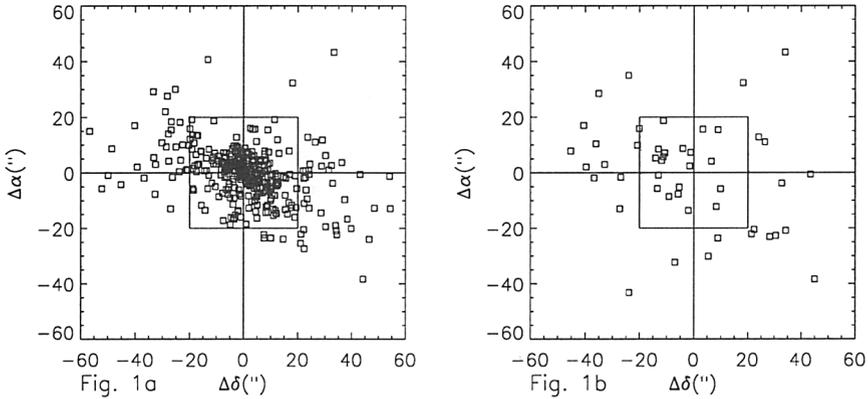


Figure 1. The plot of the difference of coordinates between SBS galaxies and IRAS sources.

Table 1. The list of 25 newly identified objects.

SBS name	IRAS name	SBS name	IRAS name
0906+502	IRASF09067+5015	1339+559	IRAS 13397+5555
0933+524	IRASF09333+5227	1410+504	IRASF14107+5028
0943+563A	IRASF09437+5620	1418+540	IRASF14187+5406
1001+584	IRASF10016+5824	1423+600	IRASF14235+6000
1020+610	IRAS 10204+6100	1512+583	IRASF15122+5823
1050+505	IRASF10502+5032	1519+508A	IRASF15195+5050
1050+573	IRASF10507+5723	1528+577B	IRASF15288+5747
1115+540A	IRASF11154+5401	1535+547	IRASF15353+5443
1115+540B	IRAS 11154+5401	1551+593B	IRASF15512+5923
1115+588	IRASF11159+5853	1600+565	IRASF16005+5632
1123+550	IRAS 11236+5503	1609+490	IRASF16094+4902
1125+581	IRAS 11258+5806	1626+596	IRASF16263+5941
1139+572	IRASF11392+5718		

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