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## VLA CONTINUUM OBSERVATIONS OF BARRED SPIRAL GALAXIES

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## ABSTRACT

In this paper we report observations of NGC 613, NGC 1300, NGC 4314 and NGC 5383 using the VLA at frequencies of 1464.9 and 4885.1 MHz. These objects are a subset of galaxies from which we have searched for radio emission. Our selection criteria were: a) they are barred spiral galaxies preferentially with different Hubble type; b) they have a peculiar or hot-spot nucleus as reported by Sersic (1973, P.A.S.P. 85, 103) or Vorontsov-Vel'yaminov, Zaitseva and Lyutyi (1972, Soviet Astron. 16, No. 1, 71); c) they have been observed at far-infrared wavelengths by IRAS (1985, IRAS Catalogs and Atlases: the Point Source Catalog, Government Printing Office) and d) they are observable from the northern hemisphere. Their radio and far-infrared properties are summarized in Table I while their composite spectra are shown in Figure 1.

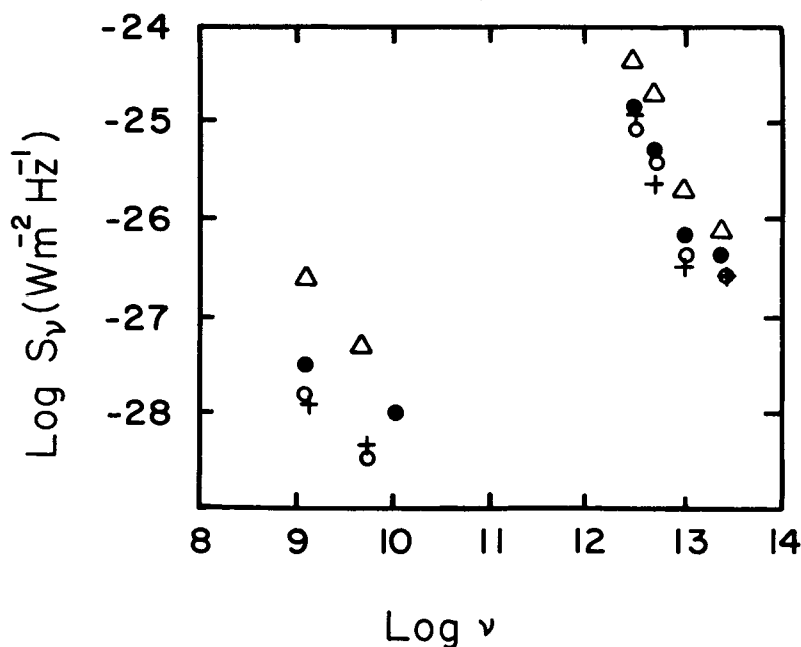


Figure 1. Composite spectra showing radio and far-infrared observations of NGC 613 ( $\Delta$ ), NGC 1300 (+), NGC 4314 (o) and NGC 5383 ( $\bullet$ ).

TABLE I. Radio and far-infrared properties.

GALAXY	TYPE	FRE- QUENCY (GHz)	S <sub>v</sub> TOTAL (mJy)	S <sub>v</sub> CENTRAL (mJy)	REF.	DIS- TANCE <sup>a</sup> (Mpc)	FIR FLUX DENSITY (Jy)			T <sub>d</sub> (°K)	L <sub>FIR</sub> <sup>b</sup> (ERG SEC <sup>-1</sup> )	FIR <sup>c</sup> M <sub>g</sub> (M <sub>⊙</sub> )	
							12 <sub>μm</sub>	25 <sub>μm</sub>	60 <sub>μm</sub>				
NGC 613	SB <sub>b</sub> (rs)	1.4649	260 ± 10	82 ± 2	1, 3	15.3	0.74	2.09	19.30	48.12	32	3.5 × 10 <sup>43</sup>	6.8 × 10 <sup>7</sup>
		4.8851	45 ± 5	15	1, 3								
NGC1300	SB <sub>b</sub> (s)	1.4649	12	5	1, 6	15.6	0.25	0.31	2.39	10.78	27	0.6 × 10 <sup>43</sup>	2.4 × 10 <sup>7</sup>
		4.8851		1	1								
NGC4314	SB <sub>a</sub> (rs) PEC	1.4649	15 ± 3	~11	1, 2	8.8	0.25	0.39	3.71	7.30	35	0.2 × 10 <sup>43</sup>	3.0 × 10 <sup>6</sup>
		4.8851	5 ± 1	~3	1, 2								
NGC5383	SB <sub>b</sub> (s)	1.4649	34 ± 1	~20	1, 4	23.5	0.36	0.65	5.23	12.60	33	2.1 × 10 <sup>43</sup>	3.8 × 10 <sup>7</sup>
		10.7	8.8 ± 1		5								

REFERENCES: (1) THIS PAPER; (2) GARCIA-BARRETO, J.A. AND PISMIS, P., 1986, IN PREPARATION; (3) HUMMEL, E., VAN DER HULST, J.M. AND DICKEY, J.M., ASTRON. ASTROPH. 134, 207; (4) SANCISI, R. AND EKBERS, R.D., 1978, ASTRON. ASTROPH. 67, L21; (5) GRÄVE, R., KLEIN, U. AND WIELEBINSKI, R., 1981, ASTRON. ASTROPH. 95, 391; (6) HUMMEL, E., PEDLAR, A., VAN DER HULST, J.M. AND DAVIES, R.D., 1985, ASTRON. SUPPL. SERIES 60, 293.

<sup>a</sup> ASSUMING: H<sub>0</sub> = 100 km s<sup>-1</sup> Mpc<sup>-1</sup>.

<sup>b</sup> ASSUMING: L<sub>FIR</sub> = 4πD<sup>2</sup>FIR, WHERE FIR = 1.26 × 10<sup>-14</sup> \* [2.58 f<sub>v</sub>(60<sub>μm</sub>) + f<sub>v</sub>(100<sub>μm</sub>)].

<sup>c</sup> ASSUMING: M<sub>FIR</sub> = 100 M<sub>FIR</sub><sup>d</sup>, WHERE M<sub>FIR</sub><sup>d</sup> = ρL<sub>FIR</sub>/3σT<sup>4</sup>(Q<sub>e</sub>/a).