

OPTICAL IDENTIFICATIONS FOR A SAMPLE OF REXS: SEARCH FOR BL LAC OBJECTS

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1. Introduction

Twenty six Radio Emitting X-ray Sources (REXs) have been observed in two observing runs as part of a project aimed at selecting a new and large sample of BL Lac objects (see Wolter et al. this conference). Sources were selected by cross-correlating ROSAT-PSPC public images against VLA radio surveys. Here we present results from the first observations of 14 sources conducted in April 1995 with a B&C spectrograph in longslit mode using a CCD-Tektronix TK-1024 AB detector at the 2.1m San Pedro Martir telescope (Mexico). Table 1 shows the data derived for the 8 confirmed REXs. X-ray fluxes are in units of $\text{erg cm}^{-2} \text{sec}^{-1}$ in the 0.1-2.4 keV band, radio fluxes are in mJy at 5 GHz, X-ray luminosities are in erg sec^{-1} in the energy range 0.1-2.4 keV and radio luminosities are in erg sec^{-1} at 5 GHz. We assumed $H_0 = 50 \text{ km sec}^{-1} \text{ Mpc}^{-1}$ and $q_0 = 0$. A more detailed description of individual sources will be published elsewhere.

2. Results from optical spectroscopy

We have identified 4 BL Lac candidates. For two candidates we were able to measure the redshift from MgI, NaI, G-band and E-band absorption lines (e.g. fig.1) probably due to the host galaxy. We computed also the f_x/f_r ratio as defined in Padovani & Giommi (1995): for the BL Lac candidates we find that the ratios are well below the dividing limit, $2 \times 10^{-11} \text{ erg cm}^{-2} \text{ sec}^{-1} \text{ Jy}^{-1}$, indicating that these objects are of the RBL-type (cf. Padovani & Giommi 1995). Finally, we note that the X-ray luminosities of our REXs are in the typical range of their class (Stocke et al. 1991). In the case of the

two BL Lac candidates, the values found are at the low end of the range typical for BL Lacs.

TABLE 1. Data for the REXs

Name	f_x L_x	f_r L_r	m_v M_v	z f_x/f_r	α_{ro}	α_{ox}	ID
REX0744.8+2920	$9.62 \cdot 10^{-13}$ $1.38 \cdot 10^{46}$	192 $4.52 \cdot 10^{34}$	15.6: -29.6	1.173 $5.01 \cdot 10^{-12}$	0.41	1.54	quasar
REX0832.0+1953	$5.15 \cdot 10^{-13}$ $5.64 \cdot 10^{45}$	92 $1.59 \cdot 10^{34}$	17.6: -27.3	1.061 $5.60 \cdot 10^{-12}$	0.49	1.34	quasar
REX1136.8+2937	$0.34 \cdot 10^{-13}$ $2.95 \cdot 10^{42}$	32 $3.11 \cdot 10^{31}$	18.2: -21.5	0.136 $1.06 \cdot 10^{-12}$	0.46	1.70	BL cand
REX1137.4+6120	$0.22 \cdot 10^{-13}$ $1.27 \cdot 10^{42}$	326 $2.03 \cdot 10^{32}$	17.9: -21.3	0.111 $6.75 \cdot 10^{-14}$	0.62	1.81	Seyfert 2
REX1309.6+0828	$1.51 \cdot 10^{-13}$ -	75 -	17.9: -	- $2.01 \cdot 10^{-12}$	0.50	1.49	BL cand
REX1416.9+2312	$0.62 \cdot 10^{-13}$ $3.87 \cdot 10^{42}$	43 $2.95 \cdot 10^{31}$	17.0: -22.3	0.116 $1.44 \cdot 10^{-12}$	0.39	1.78	BL cand
REX1503.7+1016	$0.99 \cdot 10^{-13}$ $4.08 \cdot 10^{42}$	113 $5.04 \cdot 10^{31}$	17.6: -21.3	0.095 $8.76 \cdot 10^{-13}$	0.51	1.61	NELG
REX1525.4+4201	$3.30 \cdot 10^{-13}$ -	103 -	16.8: -	- $3.20 \cdot 10^{-12}$	0.45	1.53	BL cand

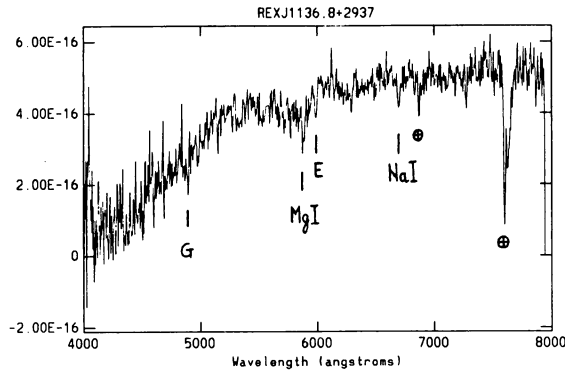


Figure 1. The optical spectrum of one of the BL Lac candidate

References

Padovani P. & Giommi P., 1995, *Ap.J.*, **444**, 567
 Stocke, J. T. et. al., 1991, *Ap.J.*, **76**, 813