ROSAT OBSERVATIONS OF EINSTEIN EMSS AGNS

M. CAPPI and G.G.C. PALUMBO
Dipartimento di Astronomia, Università di Bologna

R. DELLA CECA
Johns Hopkins University, Baltimore, U.S.A.

and

T. MACCACARO
Osservatorio astronomico di Brera, Milano, Italy

Active Galactic Nuclei (AGN) can be studied in the ROSAT energy band also when serendipitously observed during long pointed observation of unrelated targets. From the available ROSAT database three Extended Medium Sensitivity Survey (EMSS) AGNs, detected with more than 500 counts, have been studied. One AGN (MS 1803.6+6738 = Kaz 102) was observed twice and in one field the target is the BL Lac 0716+714.

-Spectral studies reveal that all three AGNs are well described by a single power law. Values of relevance are summarized in the table where they are compared to previous values from Einstein and the ROSAT survey (Walter R. & Fink H.H., 1993, *A&A*, **274**, 105). All four sources have a N_H value well below the estimated value given by Stark et al. (1992, *ApJS*, **79**, 77) and Elvis et al. (1989, *ApJ*, **97**, 777). This probably is an indication that a soft excess is present.

-Variability studies show flux variations for the BL Lac on time scales of days, while the photon index appears rather constant. The high count rate for this object allows to attribute a probability of variability greater than 99% (running a K-S test against constancy). In the case of Kaz 102, the comparison of previous measurements with the present one does not show evidence of long term (years) variability.

Name	z	N_H^{Gal} [a]	N_H^{Fit} [a]	Γ_{Fit} [b]	$Flux$ [c]	χ^2_ν	Γ_{MSS} [b]	Γ_{RASS} [b]
MS0719.9+7100	0.125	3.4	3.2	2.59±0.36	0.54	0.99	$4.44^{+9.99}_{-1.49}$	—
MS1617.9+1731	0.116	4.3	3.11	1.77±0.31	1.62	1.25	$2.23^{+0.44}_{-0.47}$	—
MS1803.6+6738 I	0.136	5.0	4.85	2.55±0.29	2.31	0.79	$1.72^{+0.26}_{-0.28}$	2.21±0.11
MS1803.6+6738 II	0.136	5.0	3.76	2.10±0.29	3.67	1.00	$1.72^{+0.26}_{-0.28}$	2.21±0.11
BL Lac 0716+714	≥ 0.2	3.4	2.46	2.54±0.08	7.11	1.16	—	—

[a] In units of $10^{20} cm^{-2}$.
[b] Photon indexes.
[c] Fluxes in the (0.1-2.4 KeV) band in units of $10^{-12} ergcm^{-2}s^{-1}$. Statistical errors are about 20%.

T. J.-L. Courvoisier and A. Blecha: Multi-Wavelength Continuum Emission of AGN, 370.