

NGC 4569: X-RAY OBSERVATION OF A SPIRAL GALAXY WITH NUCLEAR STARBURST ACTIVITY

N. JUNKES, G. HENSLER

*Institut für Astronomie und Astrophysik
Universität Kiel, D-24098 Kiel, Germany*

We investigate the distribution of soft X-rays and their spectral characteristics for a sample of nearby nuclear starburst galaxies in order to probe their evolution. NGC 4569 is a bright early-type spiral in the Virgo cluster, one of the few blue-shifted galaxies outside the local group. It is gas-deficient in the outer spiral arms, the neutral hydrogen strongly concentrated in the inner region [1]. The bright nucleus, embedded in a normal stellar bulge, is probably the result of a recent star formation episode [4]. Based upon optical spectroscopy of its nucleus [5], the galaxy has been classified as a LINER. The results on NGC 2903 will be presented separately [2].

Our target was observed with the ROSAT PSPC for ≈ 18 ks. In contrast to NGC 1808, where the bulk of X-ray emission arises from the nucleus [3], the X-ray image of NGC 4569 exhibits extended structure, and contributions from the nuclear region and the disk can be clearly distinguished. In addition, we find weak emission from an extended region at the west side of the galaxy. The global X-ray spectrum of NGC 4569 can be well described by a two-component fit consisting of a power-law component (predominantly from the nucleus) and a thermal plasma component of hot gas from SNRs and superbubbles. The resulting value of hydrogen absorption is in agreement with the Galactic foreground, the total luminosity in the ROSAT band is $\approx 2 \times 10^{40}$ erg s $^{-1}$. The value of 1.1×10^{-3} for L_X/L_{FIR} is typical for normal spirals with strong star formation predominantly in the nucleus.

References

- [1] Cayatte V. et al. (1990), AJ 100, 604
- [2] Junkes N., Hensler G. (1996), Proc. 11th IAP Meeting (in press)
- [3] Junkes N., Zinnecker H., Hensler G., Dahlem M. & Pietsch W. (1995), A&A 294, 8
- [4] Stauffer J.R., Kenney J.D. & Young J.S. (1986), AJ 91, 1286
- [5] Willner S.P. et al. (1985), ApJ 299, 443