

Research Note

A new bright X-ray galaxy

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Abstract. We report the discovery of a new bright X-ray source, most probably a bright Seyfert galaxy. The X-ray source can be identified with the known extragalactic object WPVS 48 in the infrared and optical waveband.

Key words: X-rays: galaxies – galaxies: WPVS 48

1. EXOSAT and ROSAT data

In 1983 and 1984, the X-ray satellite EXOSAT was scheduled to observe the active galaxy (AGN) MCG-5-23-16 several times. During a study of the temporal variability of AGN (König & Timmer 1997) we have found, that one of the EXOSAT observations is performed with an offset of about 3 degrees compared to the position of MCG-5-23-16. Using X-ray EXOSAT LE image, we derive a countrate of 11 . . . 18 cts/s for a newly discovered X-ray source (position estimate is $\alpha_{2000} = 10^{\text{h}}00^{\text{m}}18^{\text{s}}$, $\delta_{2000} = -31^{\circ}19'46''$, position error is about $15'$).

In order to test the hypothesis of a new X-ray source, we used the ROSAT All-Sky Survey (RASS) data to look for possible X-ray sources in the vicinity of MCG-5-23-16. The brightest X-ray source in a field-of-view of 4 degrees around the position of the galaxy, however, is not MCG-5-23-16, but the new X-ray source (listed as RXS J095942.1-311300). Its position at $\alpha_{2000} = 9^{\text{h}}59^{\text{m}}42^{\text{s}}$ and $\delta_{2000} = -31^{\circ}13'00''$ (with a position error of 8 arc sec) lies inside the EXOSAT position error box.

2. Identification

Using the ESO Digitized Sky Survey archive, we found an object with diffuse optical emission in the RASS error box. The NASA/IPAC extragalactic database allows to identify the newly discovered X-ray source with two entries: WPVS 48 ($\alpha_{2000} = 9^{\text{h}}59^{\text{m}}42.56^{\text{s}}$, $\delta_{2000} = -31^{\circ}12'58.9''$, H α + [NII] emission line galaxy, spiral type, Wamstecker et al. (1985)), and IRAS 09574-3058 ($\alpha_{2000} = 9^{\text{h}}59^{\text{m}}42.5^{\text{s}}$, $\delta_{2000} = -31^{\circ}12'59''$, Wheelock et al. (1991)). The source identification in the infrared and in the optical waveband can both be interpreted as a signature of activity of an extragalactic object. Therefore, the newly

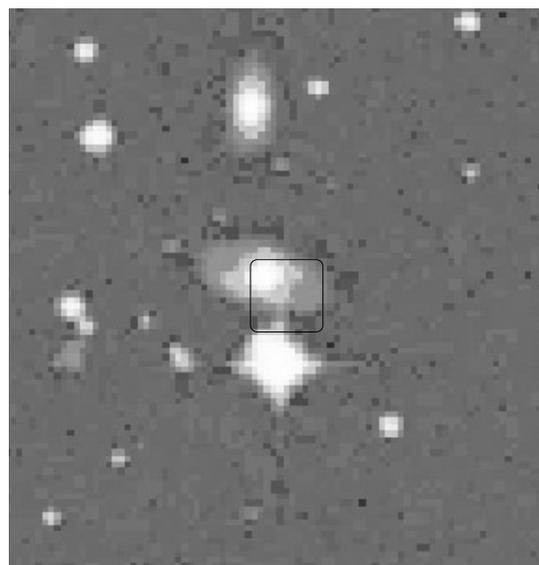


Fig. 1. ESO Digitized Sky Survey image (center at RASS position estimate, image size is $2.5' \times 2.5'$, north up, east left).

discovered X-ray source is most likely a Seyfert galaxy (with a host galaxy of spiral type). The detected high RASS countrate of 0.66 cts/s would make the new object one of the brightest AGN. For comparison, the prominent AGNs NGC 5506 and NGC 4151 exhibit RASS countrates of 0.26 cts/s and 0.47 cts/s, respectively.

References

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