

Multiwavelength observations of a Seyfert 1 galaxy detected in ACO 3627

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Abstract. ACO 3627 is a rich, nearby cluster of galaxies at the core of the Great Attractor. At the low galactic latitude of $b = -7.2^\circ$ the galactic extinction is significant. Nevertheless, its proximity makes it a prime target for studies of environmental effects on its cluster members. Here, we report on a multi-wavelength study of a Seyfert 1 galaxy at 30 arcmin from the centre of ACO 3627. Its Seyfert nature was discovered spectroscopically and confirmed in X-rays. We have obtained B_J and R_C CCD photometry as well as J, H, K and L aperture photometry at the SAAO, low and high resolution spectroscopy (ESO and SAAO), 21 cm line observations (Parkes Observatory) and X-ray ROSAT PSPC data.

The Seyfert 1 galaxy is of morphology SBa(r). It has a nearby companion (dS0) but shows no signs of interaction. A consistent value for the galactic extinction of $A_B = 1.6$ mag could be determined. The nucleus of the Seyfert is very blue with a strong ($B_J - R_C$) colour gradient in the inner 2.5 arcsec. The extinction-corrected near-infrared colours of WKK 6092 are typical of a Seyfert 1 and the X-ray spectrum conforms to the expectation of a Seyfert as well. The galaxy has a very low HI flux. This could be explained by its morphology, but also – due to its very central position within the rich Norma cluster – to ram pressure stripping.

Key words: dust, extinction – galaxies: clusters: individual: ACO 3627 – galaxies: individual: WKK 6092 – galaxies: Seyfert – galaxies: distances and redshifts – galaxies: photometry

1. Introduction

Dust and stars in the Milky Way obscure a large fraction of the extragalactic sky, creating a “Zone of Avoidance” (ZOA) in the distribution of galaxies. In an effort to reduce the size of the ZOA and thus coming closer towards an all-sky distribution of galaxies, we have embarked on a deep optical galaxy search behind the southern Milky Way (Kraan-Korteweg & Woudt 1994). This

has led to the recognition that ACO 3627 (Abell et al. 1989), also called the Norma cluster after the constellation it is located in, is a massive, nearby cluster of galaxies at the core of the Great Attractor (GA) $(\ell, b, v) = (325^\circ, -7^\circ, 4882 \text{ km s}^{-1})$ (Kraan-Korteweg et al. 1996). The Norma cluster appears to be the central, dominant component of a “great wall”-like structure and would be the most prominent overdensity of galaxies in the southern sky, were it not obscured by the Milky Way (Woudt et al. 1997).

Recent observations of the Norma cluster with the ROSAT PSPC have confirmed the massive nature of ACO 3627; it is the 6th brightest cluster in the ROSAT sky (Böhringer et al. 1996). The X-ray contours furthermore suggest the existence of a sub-cluster. The merging scenario is independently supported by the radio continuum emission of the central cD galaxy PKS1610-608. The emission from this wide-angle-tail (WAT) radio source (Jones & McAdam 1992) seems to encircle the X-ray subcluster (see Fig. 3 of Kraan-Korteweg et al. 1997) and is indicative of a strong motion of the cluster gas due to the ongoing merging process (Jones & McAdam 1996, Burns et al. 1994).

Roughly 30' from the centre of this cluster – taken as the central cD galaxy PKS1610-608 – we have identified a Seyfert 1 galaxy. It is a member of ACO 3627. In the following sections we describe the various observations of this galaxy: the discovery of the galaxy in Sect. 2, the multicolour photometry obtained at the South African Astronomical Observatory (SAAO) in Sect. 3, the spectroscopy obtained at the European Southern Observatories (ESO) and the SAAO in Sect. 4, the HI observations obtained with the 64m radio telescope of the Parkes Observatory of the Australian Telescope National Facility (ATNF) in Sect. 5, and the X-ray data from ROSAT PSPC observations in Sect. 6. The results are summarized and discussed in the last section.

2. Discovery of the Seyfert 1

Two of us (RKK and PAW) have been engaged in a deep optical search for galaxies behind the southern Milky Way ($265^\circ \lesssim \ell \lesssim 340^\circ, |b| \lesssim 10^\circ$) (Kraan-Korteweg & Woudt

1994). With a 50x magnification, film copies of the SRC II-IaJ survey were systematically scanned by eye and all galaxies with $D \geq 0.2'$ were catalogued. So far, over 11000 previously unknown galaxies have been identified in this region of the sky.

The galaxy that we report on here, WKK 6092 (Woudt & Kraan-Korteweg 1998) has been classified by us as a barred, early type spiral SBa. Its observed dimensions are $D \times d = 56'' \times 47''$ with an estimated blue magnitude of $B_J = 14^m.7$. It had not been catalogued before by Lauberts (1982) nor is it listed in the IRAS Point Source Catalogue.

Approximately 1 arcmin to the east of WKK 6092, another galaxy, WKK 6103, was found. This galaxy is an early type spiral of dimensions $19'' \times 9''$ and $B_J = 17^m.1$. Both galaxies are displayed in Fig. 1.

3. Spectroscopy

The spectroscopic observations described here are part of a larger program to gauge the 3-dimensional distribution of galaxies behind the southern Milky Way. The reader is referred to Kraan-Korteweg et al. (1994) for details and preliminary results on the individual approaches.

3.1. MEFOS spectroscopy

The MEFOS (Meudon ESO Fibre Object Spectrograph) observation of WKK 6092 was made in February 1994. MEFOS is mounted at the prime focus of the 3.6-m telescope of the European Southern Observatory (ESO), La Silla, resulting in a 1 degree field (Felenbok et al. 1997). The CCD Tek #32 was used together with grating #15, yielding a dispersion of $170\text{\AA}/\text{mm}$ and a resolution of about 11\AA . The exposure time was 2×30 minutes.

The MEFOS spectrum of WKK 6092 (cf., Fig. 2, upper panel) revealed broad Balmer emission lines, indicative of it being a Seyfert 1 galaxy. The emission lines yield an observed radial velocity of $v_{em} = 4711 \pm 30 \text{ km s}^{-1}$. Further analysis is not possible from this low resolution, narrow wavelength range ($3850\text{\AA} - 6100\text{\AA}$) spectrum, and the galaxy was subsequently reobserved at the SAAO (cf., Fig. 3, next section). The neighbouring galaxy WKK 6103, visible left of the Seyfert in Fig. 1, has been observed during the same run on another MEFOS field. It has a radial velocity of $v_{abs} = 4670 \pm 45 \text{ km s}^{-1}$ (determined from standard cross-correlation techniques following Tonry & Davies 1979), is hence at a similar redshift as the Seyfert and might be a companion of WKK 6092.

Both spectra are displayed in Fig. 2. The upper panel shows the Seyfert and the lower panel the neighbouring galaxy.

3.2. S.A.A.O. spectroscopy

We reobserved WKK 6092 for a total of 2500 seconds in June 1995 at the SAAO using the 1.9-m Radcliffe reflector with ‘‘Unit’’ spectrograph and a reticon photon-counting detector. This results in a wider spectral range ($3500\text{\AA} - 7500\text{\AA}$) including therewith also the $H\alpha$ emission line. More importantly, we

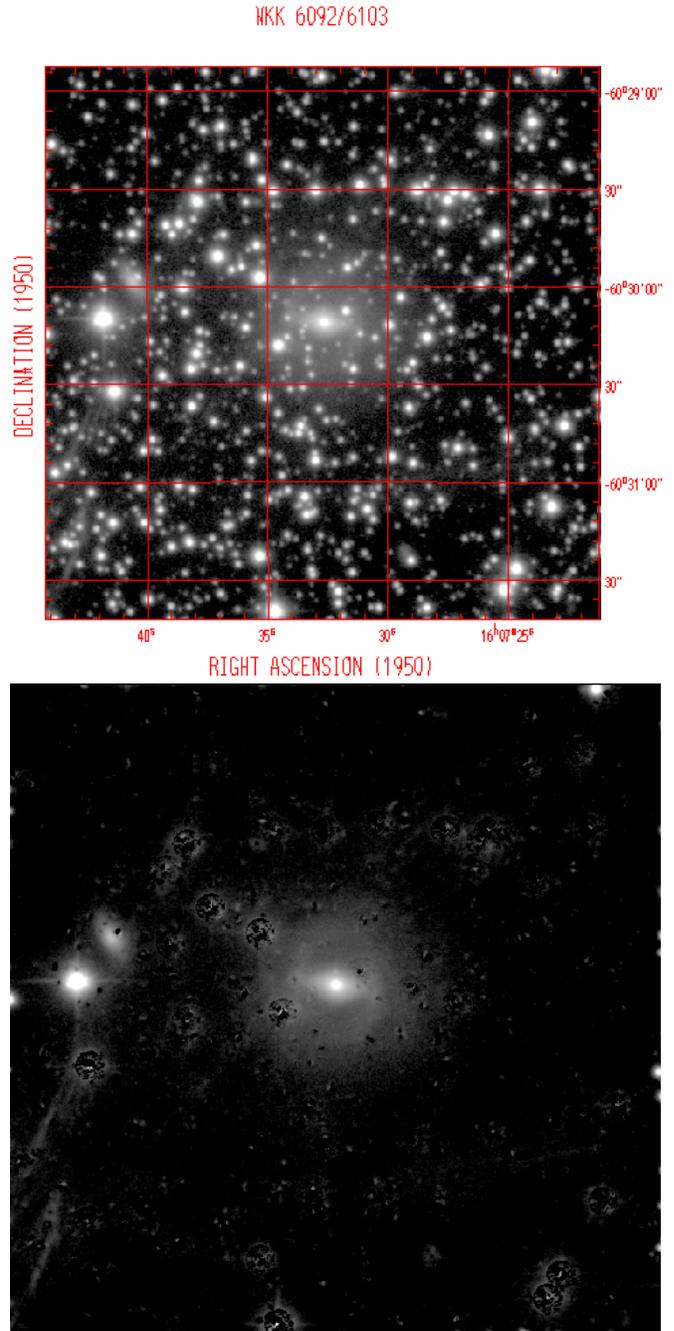


Fig. 1. The R_C CCD image of WKK 6092. Right Ascension and Declination (1950) are labelled. The companion WKK 6103 (R.A. = $16^h 07^m 40^s.6$, Dec = $-60^\circ 29^m 58^s$) is to the east of WKK 6092. The lower panel shows the same image with the stars subtracted.

observed a spectro-photometric standard star (LTT 7379) allowing the determination of the relative instrumental response and its correction.

The spectrum is displayed in Fig. 3. Its features identify it as a Seyfert 1 galaxy: broadened Balmer lines with a full width at zero intensity of 7500 km s^{-1} , but with significant narrow emission superposed, and strong narrow forbidden lines (cf., labels in Fig. 3).

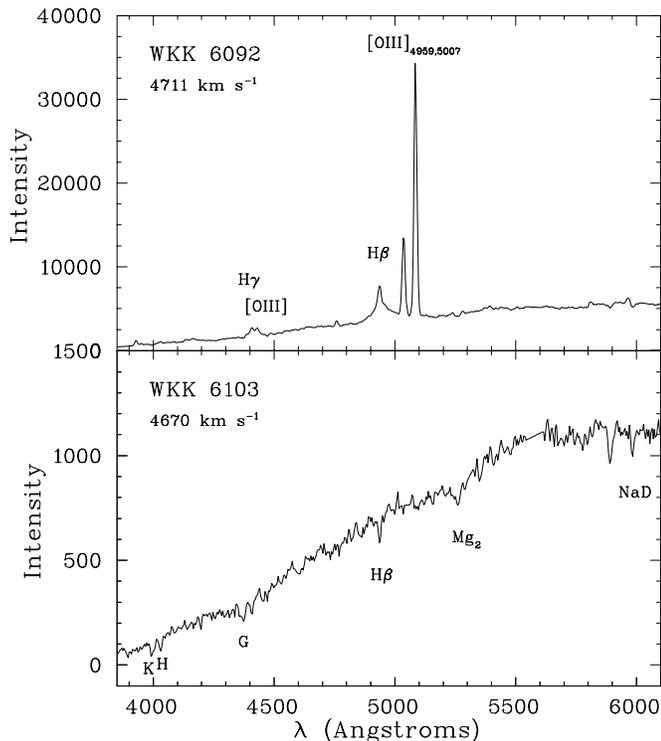


Fig. 2. The MEFOS spectrum of the Seyfert WKK 6092 (upper panel) and the companion WKK 6103 (lower panel).

The line strengths could be measured to an accuracy of approximately 10%. For most narrow emission lines, the uncertainty is somewhat higher due to the difficulty in separating the broad from the narrow emission lines, particularly in $H\alpha$ where the peak of the broad component is heavily masked by the [NII] lines on either side of the narrow $H\alpha$ emission line. The line strengths are listed in Table 1. The header line lists the identified emission lines with their respective wavelengths in Ångström. The fluxes are expressed relative to a total $H\beta$ -line intensity of 100.

The broad emission lines show a Balmer decrement ($H\alpha/H\beta$) of 4.24, the narrow lines indicate a general Balmer decrement of 4.47. Given the difficulty in separating the broad from the narrow component in the SAAO spectrum, these values are in good agreement within the observational errors.

The steepening in the Balmer decrement of the narrow component – the recombination value is 2.85 (Aller 1984) – is caused by reddening alone (Osterbrock 1989) and corresponds to a galactic extinction of $A_B = 1.7$ mag. This is in good agreement with values derived from the galactic HI column density which – at the position of the Seyfert – is $N_{\text{HI}} = 2.05 \cdot 10^{21}$ atoms cm^{-2} (Kerr et al. 1986). Assuming a constant gas-to-dust ratio, the formalism given by Burstein & Heiles (1982) predicts an absorption in the blue of $A_B = 1.5$ mag. This value is furthermore supported by extinction measurements from fits to the ROSAT PSPC X-ray spectrum (cf., Sect. 6).

The ratio of the [SII] lines 6716/6731 indicates an electron density (N_e) of approximately 600 cm^{-3} . Generally high exci-

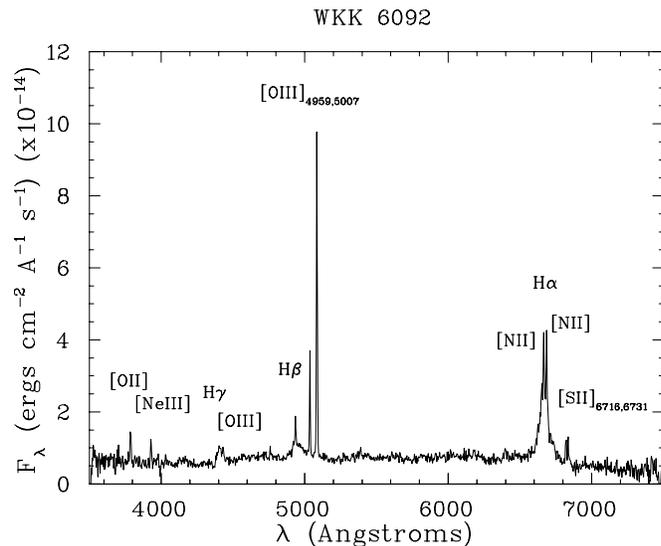


Fig. 3. Flux calibrated SAAO spectrum of the Seyfert 1 WKK 6092. The spectrum was calibrated using the spectrophotometric standard star LTT 7379. The emission lines are labelled.

tation is shown by the presence of weak [OIII] 4363 and [NeIII] 3869. The strength of the 4363 line suggests a temperature above 15000 K. The continuum can be described by a power law.

4. Photometry

4.1. B_J and R_C CCD surface photometry

In April 1996, we obtained B_J and R_C CCD images of WKK 6092 with the 1-m telescope of the SAAO. The TEK #8 CCD was used, giving a field of view of $2.6' \times 2.8'$ and a pixel size of 0.347 arcsec/pixel.

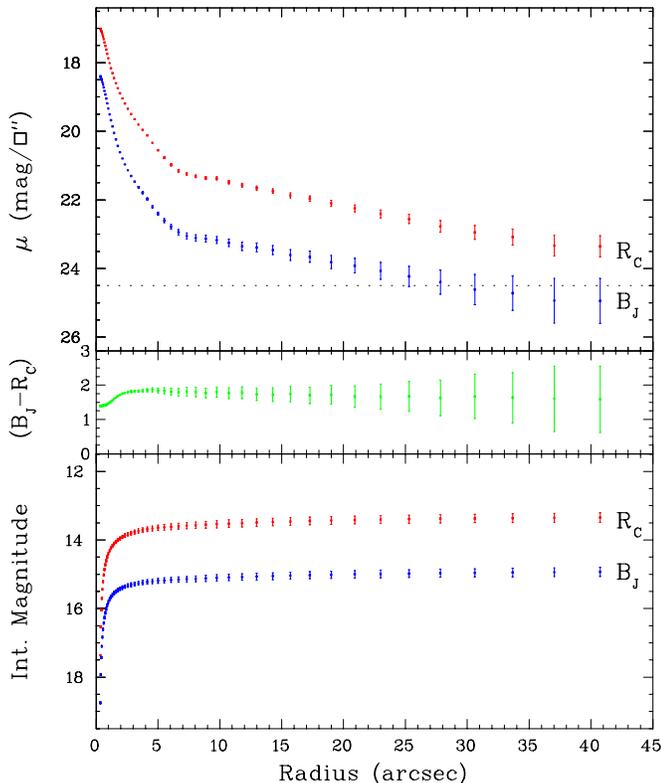
WKK 6092 was observed under good seeing conditions ($1.2''$ and $1.3''$ for R_C and B_J respectively) with exposure times of 1200 seconds in R_C and 2400 seconds in B_J . The R-band image is displayed in the upper panel of Fig. 1. This image clearly illustrates the inherent difficulties in identifying galaxies at these low galactic latitudes. Two of the more serious complications are:

1. The overwhelming number of foreground stars; applying DAOPHOT a thousand stars were, for instance, detected 3σ above the background on the R-band image.
2. The uncertain and non-uniform galactic foreground extinction at these low galactic latitudes ($|b| \leq 10^\circ$) and its effect on the observed properties of the regarded galaxies.

In the lower panel of Fig. 1, the star-subtracted CCD image is displayed. This image demonstrates the effectiveness of the star subtraction routine (important for the determination of the magnitude) and reveals further detailed structure of the Seyfert. The galaxy has a very blue nucleus. The bar of the galaxy is quite distinct and the disk very smooth with a clear superimposed ring; it is in fact a SBA(r) galaxy. The features of the Seyfert and the nearby companion, a dS0, do not reveal any indication

Table 1. Line strengths determined from the flux calibrated SAAO spectrum.

	H β Broad 4861Å	H β Narrow 4861Å	[OIII] 4959Å	[OIII] 5007Å	H α Broad 6563Å	H α Narrow 6563Å	[NII] 6584Å	[SII] 6716Å	[SII] 6731Å
WKK 6092	85	15	52	160	360	67	63	14	13

**Fig. 4.** Radial surface brightness profile (upper panel), Radial colour profile (middle panel) and the integrated magnitudes (lower panel).

that this galaxy pair is in gravitational interaction, despite their close position on the sky and in velocity space.

To determine the radial surface brightness profile and total apparent magnitudes one must first detect and then mask all the foreground stars in the image. This was done with DAOPHOT as implemented in IRAF. Once all the stars are identified, stellar light above a certain isophotal threshold is masked, this is approximately 23 mag/arcsec² in R_C and 24 mag/arcsec² in B_J.

The surface brightness profile is determined using Jedrzejewski's method (Jedrzejewski 1987) in IRAF. Both the ellipticity and position angle are kept fixed whilst determining the radial profile. This way the average counts per pixel will be based on the unmasked pixels. This method only works if less than 50% of the light is masked within the ellipse. A more detailed description of the surface photometry will be given in a separate paper, where we will map the galactic extinction from B_J and R_C photometry combined with the Mg₂ index of elliptical galaxies (Woudt et al., in prep.).

The upper panel of Fig. 4 shows the radial surface brightness profile of the Seyfert galaxy. The dotted line at the B = 24.5 mag/arcsec² isophotal level corresponds to the isophotal level of our diameter estimate on the IIIaJ film copy (Kraan-Korteweg et al. 1995). Our 'eye' estimate of 56" x 47" from the IIIaJ SRC film copy agrees very well with the CCD data (D x d)_{B=24.5} = 58" x 52".

With an observed axial ratio of d/D = 0.89 and an intrinsic flattening of r_o = 0.2, the inclination of the Seyfert according to the formalism given by Holmberg (1946), cos²i = (r² - r_o²)/(1 - r_o²) is i = 28°.

The middle panel of Fig. 4 shows the (B_J - R_C) colour. The inner 2.5 arcsec reveal a strong gradient: within the inner area the (B_J - R_C) colour changes by 0.5 - 0.6 mag. Not surprisingly, the nucleus of the Seyfert is very blue.

The lower panel shows the integrated magnitude as a function of radius. Within each ellipse the sum of the masked and unmasked pixels is multiplied by the average counts per pixel and this is then integrated over the entire galaxy. The total magnitude at the asymptotic value was found to be B_T = 14.88 ± 0.13 mag, respectively R_T = 13.30 ± 0.14 mag.

4.2. Near-infrared observations

The 0.75-m telescope of SAAO was used to obtain single aperture (9") JHKL (1.25 - 3.4 μm) broadband photometry of WKK 6092. The Seyfert was observed twice in May 1996. The observations were made in the same photometric system as reported by Glass & Moorwood (1985) and further details on observation and reduction procedures are described there.

The resulting J, H, K and L magnitudes of WKK 6092 are 12.91, 11.91, 11.51 and 10.60 (cf., Table 2), and the respective near infrared colours are (J - H) = 0.93, (H - K) = 0.47, (K - L) = 0.91. The typical errors in J, H and K are 0.03 mag, whereas the error in L is somewhat larger (0.15 mag).

Assuming A_B = 1.6 mag (cf., Sects. 3.2 and 6) and the relative extinction values in the near infrared by Cardelli et al. (1989), the extinction-corrected colours are (J - H)₀ = 0.82, (H - K)₀ = 0.38, (K - L)₀ = 0.84. These colours compare well with known Seyfert 1's (e.g. NGC 1566), although there is evidence for a significant contribution of the underlying galaxy - even with the 9" aperture which primarily contains the nucleus.

5. 21cm observations

The Seyfert galaxy was observed in HI with the 64-m radio telescope at the Parkes Observatory (ATNF) in July 1995 as part of program of measuring redshifts for obscured, low surface

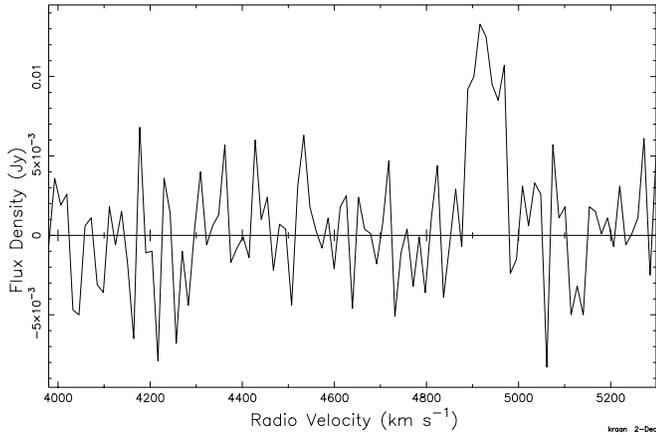


Fig. 5. HI spectrum as obtained at the Parkes 64m radio telescope from a 60 minute integration. The velocity axis is in the radio convention.

brightness galaxies behind the Milky Way (Kraan-Korteweg et al., in prep.). In this observing mode we used two IF’s and offset 512 of the 1024 channel of each polarization by 22 MHz. This resulted in a velocity coverage of 0 – 10000 km s⁻¹ and a velocity resolution of 12.6 km s⁻¹. The observations were carried out in total power mode. Six 10 minute ON-source observations were performed, preceded by an equal length OFF-source observation at the same Declination but 10.5 time minutes earlier in Right Ascension to cover the same patch of the sky for both the reference and the signal spectrum. The online control program automatically corrected for the zenith angle dependence of the telescope sensitivity. The telescope has a HPBW of 15’ with a system temperature at 21 cm of typically $T_{sys} = 39$ Jy.

The data were reduced using the package “SLAP”, or Spectral Line Analysis Program (Staveley-Smith 1985). The two polarisations of the 6 scans were averaged together. With a 5th-order polynomial baseline an r.m.s. of $\sigma_f = 3.3$ mJy was obtained for this 60 minute integration. The reduced HI spectrum of the Seyfert galaxy is displayed in Fig. 5.

A weak signal is seen at $v_{rad} = 4929$ km s⁻¹, translating to a velocity in the optical convention of $v_{opt} = 5012$ km s⁻¹. This is higher than the optical measurements ($\Delta v = 301$ respectively 324 km s⁻¹ for MEFOS and SAAO). A difference between the HI velocity and the optical measurement, as observed here for WKK 6092, has been seen before in Seyfert galaxies (Mirabel & Wilson 1984). It is caused by the net outflow of gas in the narrow emission-line regions (Mirabel & Wilson 1984). The observed velocity difference for WKK 6092, i.e., ~ 300 km s⁻¹, is relatively large for Seyfert 1’s.

The signal to noise ratio is only $S/N = 2.8$, however, the signal is consistent in flux and shape throughout all individual scans. The profile is narrow and Gaussian in shape – not unexpected considering that this galaxy is fairly face-on.

The linewidths measured at the 50% and 20% level are $\Delta v_{50} = 88$ km s⁻¹ and $\Delta v_{20} = 97$ km s⁻¹. Even when corrected for inclination and a velocity dispersion in the z-direction (cf., Richter & Huchtmeier 1984) the linewidths (150 and 169 km

s⁻¹) seem relatively low for a luminous spiral galaxy. The integrated HI flux of the Seyfert is $I = 0.93$ Jy km s⁻¹.

Adopting a distance of $93 h_{50}^{-1}$ Mpc (Kraan-Korteweg et al. 1996), global properties can be evaluated. The HI mass is:

$$\mathcal{M}_{HI} = 2.36 \cdot 10^5 \cdot R^2 \cdot I = 1.9 \cdot 10^9 \mathcal{M}_{\odot}.$$

The absolute blue magnitude, corrected for galactic foreground extinction, is $M_{BT}^o = -21.52$. The HI mass-to-blue light ratio then is:

$$\mathcal{M}_{HI}/\mathcal{L}_{B^o} = 0.03.$$

Following Casertano & Shostak (1980), the total mass can be determined from the corrected linewidth, the distance R (in Mpc) and the extinction-corrected diameter D^o (in arcmin):

$$\mathcal{M}_T = 7500 \cdot D^o \cdot R \cdot (\Delta v_{20}^{o,i})^2 = 3.0 \cdot 10^{10} \mathcal{M}_{\odot}.$$

Although the HI mass and HI mass-to-blue light ratio are quite low, they both lie well within the range typical of barred spiral galaxies of morphological type SBa to SBab (cf., Huchtmeier & Richter 1988, 1989 for a field and cluster sample). Considering furthermore the uncertainties due to the large foreground extinction corrections, the total mass is also in perfect agreement with the expectation for a barred early-type spiral.

6. X-ray

The cluster ACO 3627 was observed with the ROSAT PSPC for an effective exposure time of 11,257 ksec on September 23 and 24, 1992 and March 13 to 15, 1993. In this observation WKK 6092 is well detected as an X-ray source about 6 arcsec to the north of the optical position. This is well within the typical pointing accuracy of the ROSAT observatory and the Seyfert galaxy can actually be used for the astrometric correction of this ROSAT pointing. The Seyfert galaxy is located at a distance of about 20 arcmin from the X-ray cluster centre (note: not the central radio source). It lies in the outer very low surface brightness region of the cluster (cf., images in Böhringer et al. 1996) and stands out clearly above the cluster background and the general X-ray background. In the PSPC observation the Seyfert is located very close to the support ribs of the PSPC window. With the galaxy approximately in the same direction from the pointing centre (cluster centre) as the position angle of the wobbling of the ROSAT telescope, the X-ray source is, however, not so severely obscured and a good flux measurement is possible.

About 580 ± 80 source counts are detected for the Seyfert, yielding a count rate of 0.052 ± 0.007 s⁻¹, an unabsorbed (0.5 - 2.0 keV) flux of $1.05 \pm 0.15 \cdot 10^{-12}$ erg s⁻¹ cm⁻² and a luminosity of $1.2 \pm 0.17 \cdot 10^{42}$ erg s⁻¹ in the 0.5 to 2.0 keV band. No significant variation of the count rate could be detected within and between the observing intervals.

The background subtracted spectrum of WKK 6092 is shown in Fig. 6. It can be perfectly fitted with an absorbed power law model with best fitting values for the photon power law index of about $\gamma = -1.7$ and the absorption column density of about $N_H \sim 2.2 \cdot 10^{21}$ cm⁻² yielding a reduced χ^2 of 0.8.

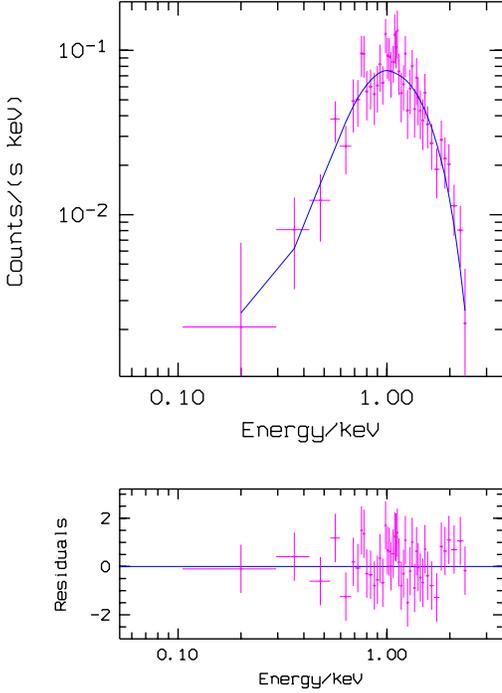


Fig. 6. X-ray spectrum WKK 6092.

But the uncertainties are very large with values of the order of 70% (1σ). The photon index is equal to the canonical value and the absorption column density is close to the value found for the cluster, and independently from 21 cm observations at this position (Kerr et al. 1986, cf., also Sect. 3.2). We can therefore only state that the spectral fits are consistent with the standard expectation for this object. An upper limit (at a 2σ level) for the internal absorption of the X-ray emission from the Seyfert galaxy can be set to about $6 \cdot 10^{21} \text{ cm}^{-2}$.

7. Discussion

We have observed the Seyfert galaxy WKK 6092 at different wavelengths. The resulting data are summarized in Table 2.

WKK 6092 and its neighbour are both members of ACO 3627. They have similar redshifts but show no indications of interaction. The morphology of both galaxies do not seem distorted (cf., Fig. 1). The Seyfert has a very blue nucleus, a distinct bar and a ring superimposed on an otherwise smooth disk.

An upper limit for the Galactic foreground extinction in the line of sight of the Seyfert galaxy can be set at $A_B = 1.6$ mag. This was determined by three different methods, the Balmer decrement in the optical spectrum, the fitting of an absorbed power law to the X-ray spectrum and the Galactic HI column densities. All give a consistent value of the foreground extinction. A minor fraction of the extinction is intrinsic to the galaxy.

The extinction corrected near-infrared colours of WKK 6092 are typical of a Seyfert 1 and are in agreement with well known Seyfert 1's such as NGC 1566 (Glass & Moorwood 1985). The X-ray spectrum is also consistent with the standard expectation for this object.

Table 2. Observational parameters of WKK 6092

Coordinates:

R.A. (1950)	$16^h 07^m 32.7^s$
DEC. (1950)	$-60^\circ 30' 11''$
Galactic Longitude	325.20°
Galactic Latitude	-6.74°

Properties:

Hubble Type	SBa(r)
Dimensions (a x b)	$56'' \times 47''$
Ellipticity (1-b/a)	0.11
Inclination	28°
Position Angle	96°

Photometry:

B_J (IIIaJ)	14.7 ± 0.5 mag
B_{25} (CCD)	14.96 ± 0.09 mag
B_T (CCD)	14.88 ± 0.13 mag
R_{24} (CCD)	13.38 ± 0.12 mag
R_T (CCD)	13.30 ± 0.14 mag
J_c	12.91 ± 0.03 mag
H	11.98 ± 0.03 mag
K	11.51 ± 0.03 mag
L	10.60 ± 0.20 mag
HI flux	$0.93 \text{ Jy km s}^{-1}$
X-Ray (0.5–2.0 keV):	
Flux	$1.05 \pm 0.15 \cdot 10^{-12} \text{ erg s}^{-1} \text{ cm}^{-2}$

\mathcal{L}_X

Galactic Extinction (A_B):

from HI	1.5 mag
from Balmer decrement	$\lesssim 1.7$ mag
from X-ray	1.6 mag

Heliocentric velocity:

MEFOS	$4711 \pm 30 \text{ km s}^{-1}$
S.A.A.O.	$4688 \pm 40 \text{ km s}^{-1}$
Parke 64-m	$5012 \pm 5 \text{ km s}^{-1}$
Δv_{50}	88 km s^{-1}
Δv_{20}	97 km s^{-1}

At the adopted cluster distance of $R = 93 h_{50}^{-1} \text{ Mpc}$, the absolute magnitude (corrected for the galactic extinction) is $M_{B_T}^o = -21.52$. The HI and total mass is $1.9 \cdot 10^9 \mathcal{M}_\odot$ and $30 \cdot 10^9 \mathcal{M}_\odot$, respectively. The Seyfert is at a projected distance of $0.8 h_{50}^{-1} \text{ Mpc}$ from the cluster centre and the HI content of the galaxy might be influenced by interactions with the Inter Cluster Medium due to processes like ram pressure stripping (Cayatte et al. 1990). The HI content is in fact quite low. This is, however, not inconsistent with the expectation for a barred early-type spiral.

Despite the difficulties in analysing data of an object deep within the Milky Way, all data concerning the here investigated Seyfert galaxy WKK 6092 at 30 arcmin from the centre of the rich cluster ACO 3627 correspond to the standard characteristics of a Seyfert 1 galaxy.

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