

CCD photometry of the Wolf Rayet galaxy Mink

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Abstract. We present here the results from B and V photometric observations of the Wolf Rayet galaxy Mink which was observed through the 104 cm telescope of U.P. State Observatory using 1K x 1K CCD. The surface brightness profiles in B and V filters and the contour map in B filter are given.

Key words : galaxy, surface photometry, Mink

1. Introduction

Wolf Rayet (W-R) galaxies are those galaxies whose integrated spectra show a broad emission feature of HeII at 4686 Å, which can be attributed to W-R stars (Conti, 1991). While Seyfert galaxies and AGNs often show a 4686 Å He II line, W-R galaxies can be distinguished from them by their relatively narrow nebular emission lines. Such galaxies are found exclusively among emission line galaxies where the photoionization of the nebular line spectra is stellar in origin. Most W-R galaxies have a very blue continuum and some are classified as blue compact dwarf galaxies. The class of W-R galaxies encompass a very heterogeneous set of properties, i.e., there are systems in which the W-R stars are found in the nucleus and others in which a single giant H II (GHII) region appears to have such stars present. Very few W-R galaxies are identified (Conti, 1991) and optical observations are lacking for most of them. The surface photometry of this galaxy in BVRI filters are not available. This photometry supplemented by the photometry based on the far ultraviolet and observations from HST data will be useful to estimate the stellar population in the galaxy based on colour gradients. In this paper we present some of the preliminary results of the W-R galaxy Mink.

2. Observations and reductions

Imaging observations of the galaxy Mink ($\alpha_{1950} = 01^h55^m14^s$, $\delta_{1950} = -01^\circ37^m55^s$, $z = 0.0187$) in B and V filters have been carried out using the photometric CCD system at f/13 Cassegrain focus of the 104 cm Sampurnanand reflector of the Uttar Pradesh State Observatory, Naini Tal during November, 1996. The CCD system consists of a cryogenically cooled Tektronix chip with 24 micron square pixels in 1024 x 1024 array.

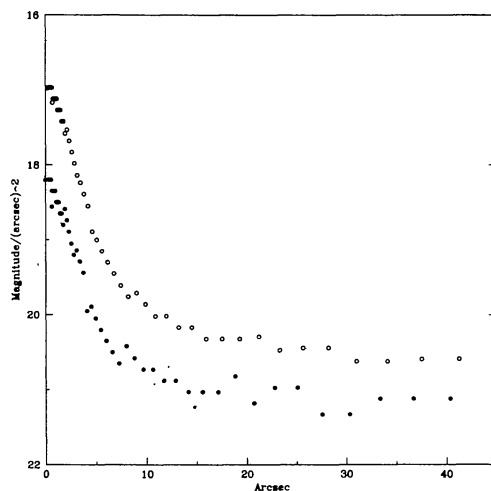


Figure 1. Surface brightness profile of the Galaxy in filters B and V. The filled dots are for V filter and filled triangles are for B filter.

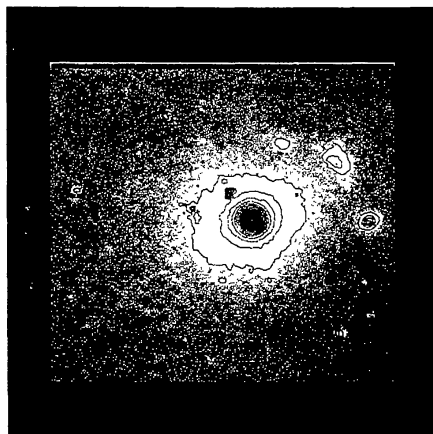


Figure 2. Contour map of the galaxy Mink in B filter

To improve the S/N, the observations were taken in binning mode of 2×2 pixels. In this set up the entire chip covers a field of $6.0' \times 6.0'$.

Calibration of the magnitudes were done using the standard stars in M67 cluster. A number of bias and twilight flat field frames were also taken during the observing runs. Image reductions were done using IRAF, and surface photometry was done using APPHOT and STSDAS softwares.

The surface brightness profiles in B and V filters are shown in Figure 1. Contour map in B filter is shown in Figure 2. Surface brightness profiles in both the filters are similar and the contours are almost symmetric in shape. Detailed discussions and other parameters of this galaxy will be published in next paper.

References

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