

DETAILED SURFACE PHOTOMETRY OF THE DUST-LANE ELLIPTICAL NGC 6702

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We present preliminary results of a detailed photometric study of NGC 6702, from high resolution photographs taken at the Cassegrain focus of the Canada-France-Hawaii (CFH) telescope. The luminosity distribution of the galaxy follows an $r^{1/4}$ law ($r_e^* = 11.6''$, $\mu_e^* = 22.17$). The axis ratio is 0.75 (corresponding to the morphological type E3) and the position angle of the major axis is 60° and fairly constant. Fig. 1 is an image in intensity of the galaxy, from a 30mn exposure in B. The galaxy is crossed by a dust lane, reported first by Capaccioli et al. (1984).

To reveal the structure of the dust, we have subtracted from the previous image the model of an elliptical galaxy having the photometric and geometric parameters quoted above. The result of this numerical unsharp masking is shown in Fig. 2. The dust lane is in position angle 320° , that is 10° West of the minor axis. The isophotes brighter than $20 \text{ mag arcsec}^{-2}$ are pear-shaped, and indicate that the dust obscures the North-Eastern half of the inner regions of the galaxy. The dust lane is $20''$ long (4.4 kpc at the distance of 45 Mpc given by de Vaucouleurs and Olson, 1984) and $3''$ wide (650 pc). Its dimensions and relative orientation are comparable to those of the dust lanes in NGC 5128 (5.5 x 1.1 kpc at 3 Mpc) and NGC 5266 (5.6 x 1.2 kpc at 24 Mpc). The origin of the dust lane must be sought elsewhere.

NGC 6702 is not a strong radio source. It has not been detected at 21 cm (Knapp, Turner and Cunniffe, 1985), and its flux at 6 cm is less than 1 mJy (Impey, Wynn-Williams and Becklin, 1986).

The companion elliptical galaxy NGC 6703, located $10'$ to the South-East is a foreground galaxy at 17 Mpc. Its isophotes are fairly round ($c/a = 0.95$) and show no signs of tidal interaction.

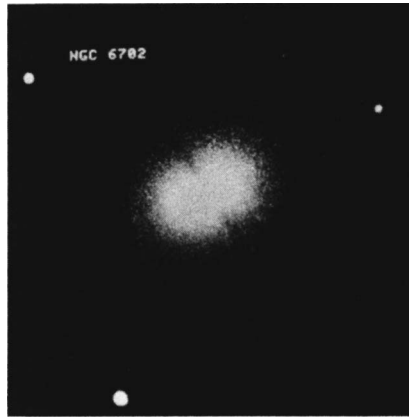


Figure 1: NGC 6702 from a 30mn blue exposure at the Cassegrain Focus of the CFH telescope.

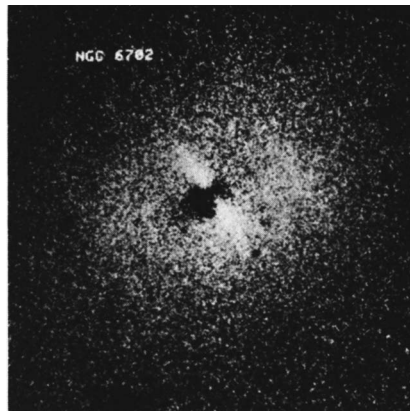


Figure 2: The dust lane of NGC 6702 after removal of the luminosity gradient of the galaxy in the above image

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