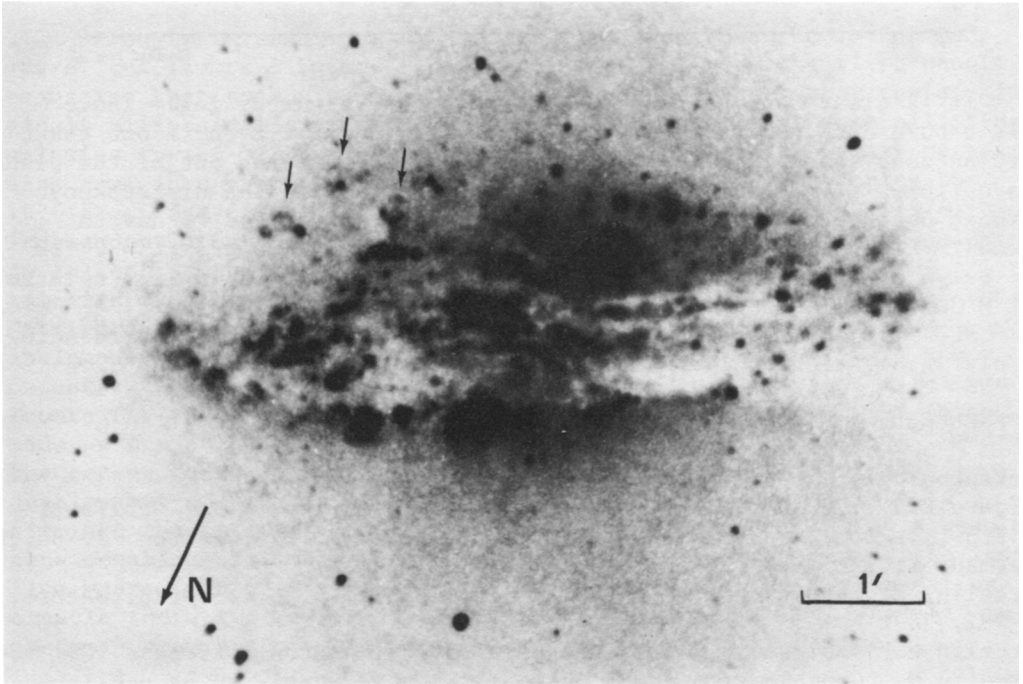


KINEMATICS AND EVOLUTION OF NGC 5128

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Recently Marcelin et al (1982) published some results of Fabry-Perrot interferometry of NGC 5128. We would like here to draw attention to several more aspects of this enigmatic galaxy.

The following photograph is a H_{α} plate of NGC 5128 taken by Comte and Georgelin with a focal reducer and an image-tube attached at the Cassegrain focus of the 3.6 m ESO telescope. Arrows point at bubble-like HII regions.



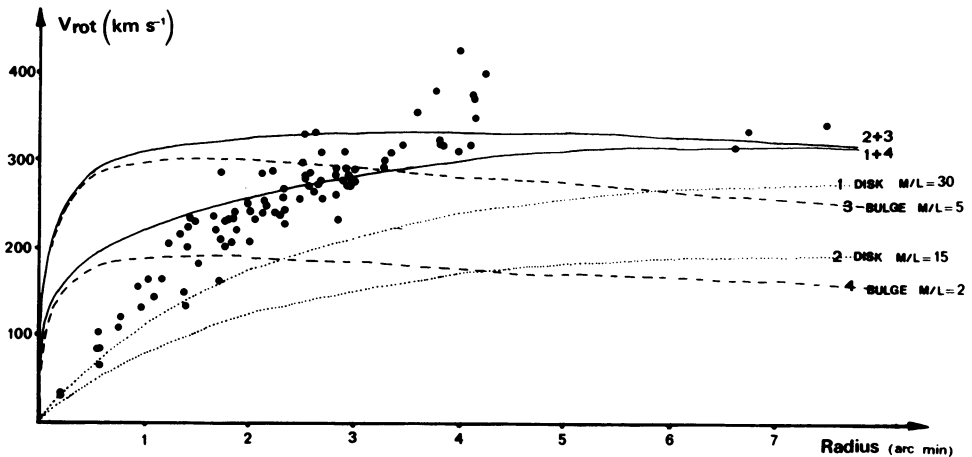
Several bubble-like HII regions have been thoroughly studied in M31 and M33 (Pellet et al. 1978). Others have been detected recently in NGC 925 (Marcelin et al. 1982b) and NGC 1313 (Marcelin and Gondoin, 1983).

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The best defined ring has a diameter of 11", i.e. 250 pc at 5 Mpc, which is consistent with other observations of HII rings. However, according to de Vaucouleurs (1978), the diameter of the largest HII ring would suggest here a distance closer to 4 Mpc, which is the distance to the Centaurus group.

The figure below shows a comparison between the observed rotation curve (including the outermost points, see Marcelin et al. 1982a) and a theoretical model with two components (Monnet and Simien, 1977). The photometric parameters adopted respectively for the bulge and disk are those given by Dufour et al. (1979) and Freeman (1970).



It is clear that the observed rotation curve surprisingly looks like a pure disk rotation curve (see curves 1 and 2). Even if one takes into account some projection effect due to matter moving out of the plane, (Marcelin et al. 1982a) it is not possible to explain the discrepancy between observations and model when the bulge is supposed to have a normal M/L around 5 (curve 2+3, quadratic sum). A value of M/L = 2 for the bulge is far more acceptable (curve 1+4) although it implies a large M/L = 30 for the disk.

NGC 5128 thus appears to have a young massive dark disk surrounding an old light bright bulge.

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