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FABRY PEROT Hα OBSERVATIONS OF THE BARRED SPIRAL GALAXY NGC 3367

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We report the gross properties of the velocity field of the barred spiral galaxy NGC 3367 based on Fabry Perot Observations of the Hα emission. The emission is detected up to a radius of 60$''$.

NGC 3367 is an isolated barred spiral galaxy at a distance of 43.6 Mpc (1$''$ corresponds to 210 pc). Noticeable are: its south-west bright optical morphology resembling a bow shock structure covering a semicircle at a distance of about 10 kpc from the center, and its two radio continuum lobes straddling the nucleus and away from the plane of the galaxy, a result of central activity.

In this contribution we report observations carried out with the PUMA instrument attached to the San Pedro Mártir 2.1-m optical telescope in Baja California, México. The field of view was $5' \times 5'$ with a pixel size of $0\farcs6 \pm 0\farcs01$ and a total of 512 pixels. A total of 48 interference channels were obtained with a velocity separation of 19 km s^{-1}. Our cube consisted of 48 planes each 512×512 pixels. The raw data was calibrated using the software CIGALE (Le Coarer et al. 1993). Data analysis was done with AIPS package using several routines (among them MOMNT and GAL). Because of instrumental setup and atmospheric conditions our final angular resolution was $6\farcs5 \times 4\farcs1$ at position angle 13°. All the planes were aligned before the final analysis of the velocity field. For the continuum emission channels 2 to 13 and 37 to 48 were selected and after careful combination it was subtracted from the cube. The figure shows the isovelocity contours indicating nearly circular rotation with deviations mainly from the south west semicircle corresponding to the bright optical structure. Using the task GAL we obtained the following values: inclination of the plane of the galaxy with respect to the plane of the sky, $i = 30°$; position angle of the receding half of the velocity field, P.A. = 51°, systemic velocity, $V_{\rm sys}$ = 3032 km s^{-1}, maximum velocity (fitting a Brandt 1960 curve), $V_{\rm max} = 210$ km s^{-1} and radius at which maximum rotation velocity occurs, $R_{\rm max} = 52''$. The estimated dynamical mass, using $V_{\rm max}$ and $R_{\rm max}$ was $M_{\rm dyn} = 2 \times 10^{11} M_{\odot}$.

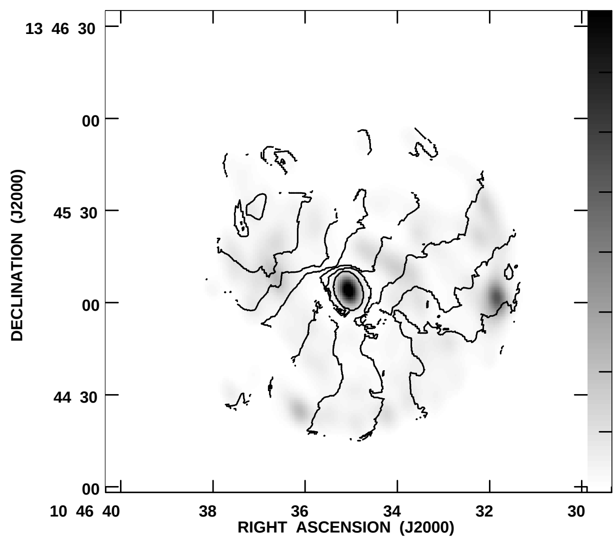

Fig. 1. Isovelocity contours (moment 1) superimposed on the total integrated Hα intensity (moment 0) map in grey scale. Kinematic receding semi major axis was found to be at P.A. = 51°. Velocities are 2940, 2960, 3000, 3040, 3080, 3100, 3120 and 3140 km s^{-1}. $V_{\rm sys}$= 3032 km s^{-1}.

This work is discussed more fully in García-Barreto & Rosado (2001).

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