FIRST SPECTROSCOPIC RESULTS ON NGC 151, NGC 1433, NGC 6221 AND FAIRALL 9 OBTAINED AT BOSQUE ALEGRE STATION

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Observations of the bars and nuclear regions of NGC 151, NGC 1433, and NGC 6221 were performed, with the aim of improving the knowledge about the kinematics of nuclear regions of barred spirals. Preliminary results show the existence of peculiar radial velocity fields near the nuclei. The emission line spectra suggest clear differences between the nuclear regions (with signs of activity) and the external —normal— zones. NGC 6221: this is an SBbc-type spiral; the spectral features of the nucleus suggest the coexistence of a type H II region source and a Seyfert 2 one. Each emission line observed in the nuclear region shows two components blueshifted in relation to the mean radial velocity of the general field. The bluer component has a 500 km/s FWHM, and an Hα/[N II] ratio of 1.54. The other component has a FWHM of 180 km/s, and an Hα/[N II] ratio of 2.06. The radial velocity of the nucleus is about 1440 km/s. NGC 151: this is a type SB(r)bc galaxy presenting weaker emission lines in the nuclear region as compared with the emission in the regions located at the tips of the bar, the ring and the arms. The systemic velocity is 3774 km/s $\pm$ 20 km/s. There is a component with lower radial velocity in the nucleus. NGC 1433: this is a SB(r)a galaxy exhibiting weak emission lines in the nuclear region. The Hα/[N II] ratio is about 0.8 (Sy-like). The first spectra obtained along the bar yield a heliocentric radial velocity for the nucleus of 1098 km/s $\pm$ 20 km/s, while the systemic velocity as measured by Strauss et al. (1992) is 1064 km/s $\pm$ 20 km/s, or, according to H I data from the Third Reference Catalogue of Bright Galaxies, 1075 km/s $\pm$ 6 km/s. A cleaned spectrum of the Seyfert galaxy Fairall 9 is also presented.

Strauss M., Huchra J., Davis M., Yahil A., Fisher K., & Fisher T. 1992, ApJS 83, 29

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OBSERVATIONS OF GRAVITATIONALLY LENSED QUASARS WITH THE HUBBLE SPACE TELESCOPE

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We used HST/WFPC2 to obtain a series of exposures of known gravitational lens systems in the V, R and I bands. Our goal was to determine robust models of these lens systems, i.e., models of the mass distributions of the lensing galaxies. Our targets were selected on the basis of their being considered secure lens systems with a single galaxy acting as the lens. Thus, we designed our observations to detect the lensed quasars with the highest possible resolution (using PC1), and we integrated sufficiently long to detect the lensing galaxies with high SNR.

The table below shows the details of our successful observations up to now. In each case, the combined exposures for each filter yielded a high-SNR detection of all the known lensed images, and of the lensing galaxy.

Type	Object	Exposure (seconds)	Filter	V (mag)
Double	UM 673	2500	F555W	16.5
Double	UM 673	1200	F675W	16.5
Quad	MG0414 + 0534	8100	F675W	24.5
Quad	MG0414 + 0534	10500	F814W	24.5
Double	BRI0952 − 01	5400	F675W	20.7

We fitted simple isothermal, elliptical models of the type introduced by Blandford & Kochanek (1987), and models that used the light distribution of each galaxy as measured in our exposures, assumed a constant mass-to-light ratio, and allowed the addition of an external shear to the model. Our preliminary results are that each system can be accounted for with a high degree of accuracy. The ellipticities required in our models remain somewhat higher than expected, based on the visible ellipticities of the lensing galaxies. A detailed discussion of these models and the data can be found in Falco et al. (1996).

Blandford, R.D., & Kochanek, C.S. 1987, ApJ 321, 658

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