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
spiral galaxies. 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 HII 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/[NII] ratio of 1.54.
The other component has a FWHM of 180 km/s,
and an Hα/[NII] 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 ± 20 km/s. There is a component with
lower radial velocity in the nucleus. NGC 1433: this
is a SB(r)bc galaxy exhibiting weak emission lines in
the nuclear region. The Hα/[NII] 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 ± 20 km/s, while the systemic velocity
as measured by Strauss et al. (1992) is 1064 km/s
± 20 km/s, or, according to H1 data from the Third
Reference Catalogue of Bright Galaxies, 1075 km/s
± 6 km/s. A cleaned spectrum of the Seyfert galaxy
Fairall 9 is also presented.

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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.

<table>
<thead>
<tr>
<th>Type</th>
<th>Object</th>
<th>Exposure (seconds)</th>
<th>Filter</th>
<th>V (mag)</th>
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<td>F855W</td>
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<td>1200</td>
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</table>

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).

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