

1.17 - 1.34 μ m IFU observations of nearby AGN with Gemini South

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Abstract. We present an overview of the initial data processing of near-IR bi-dimensional spectroscopy of the central region of two nearby ($v < 3000 \text{ km s}^{-1}$) Active Galactic Nuclei, obtained using the CIRPASS IFU at Gemini South.

1. Observations

We observed a total of five nearby ($v < 3000 \text{ km s}^{-1}$) AGN with extended narrow line and linear radio emission in the J and H bands, the data for two of which are presented here, corresponding to the interval around 1.255 μ m including the [FeII] 1.257 μ m, and Pa β emission lines.

The CIRPASS IFU contains 490 elements, which, for the chosen configuration of 0.36'' lens size, results in a field of view of 13'' \times 4.7''. The data reduction was done using the IRAF scripts provided by the CIRPASS team, and include flat-fielding, fibre extraction, correction by the individual fibres response, and wavelength calibration, then telluric absorption correction and relative flux calibration using a field star of appropriate spectral type and airmass.

NGC 2110 and NGC 2992 were observed at Gemini South in 2003 March 08 and 09, with a total exposure time of one hour on source for each galaxy. The image quality (point source FWHM) of separate observations varied between 0.4'' and 0.8'' in the J band.

The two top panels in Figure 1 show the extracted spectra from individual fibres on the combined frame of NGC 2110, along PA=0° and PA=120° (for reference the radio axis is oriented along PA=10°). The large [FeII]/Pa β ratio and the extended line wings (associated with the radio jets) are known characteristics of this AGN.

The bottom panels show the extracted spectra from individual fibres on the combined frame of NGC 2992 along PA=218° and PA=278° (the very prominent dust lane is oriented along PA \sim 30°, and the extended NLR is roughly aligned with the galaxy's minor axis). There is contamination by the strong broad component of Pa β across several fibres, but still, the [FeII] is clearly more extended towards the SW, almost perpendicular to the optical emission line cone and nuclear radio emission. Coronal emission from [SiX] 1.252 μ m is detected in the nuclear spectrum.

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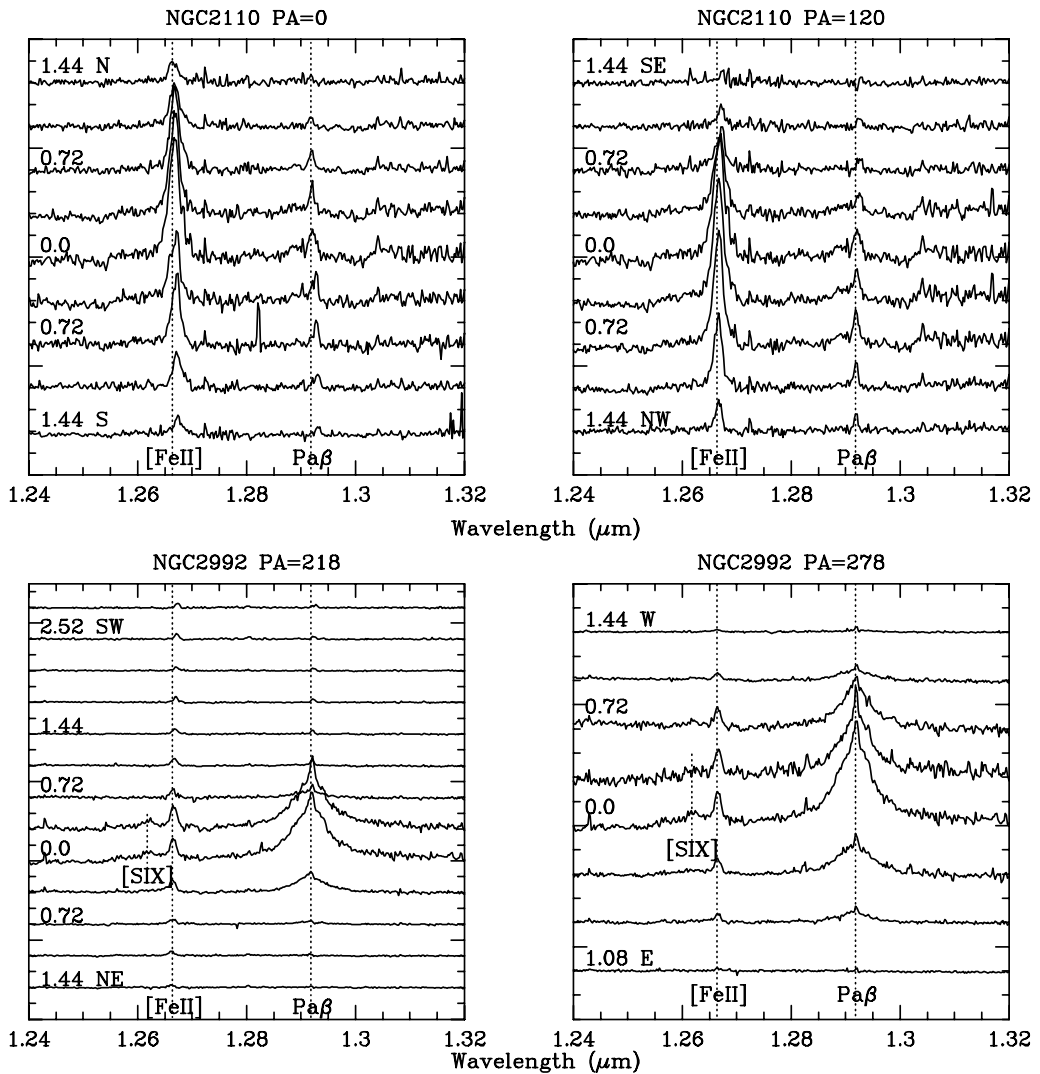


Figure 1. Extracted spectra from individual lenses along the indicated position angles in NGC2110 (top) and NGC 2992 (bottom). Vertical axes are Flux in relative units, and the individual spectra within each panel have been shifted for clarity.

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