

GALAXIES WITH STRONG NITROGEN LINES

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ABSTRACT. From a qualitative spectroscopic survey of southern galaxies made by Pastoriza, a group with different morphological types whose nuclear region showed particular strong emission $[\text{N II}]\lambda 6548\text{--}6584$ lines when compared to $\text{H}\alpha$, was selected in order to investigate why $[\text{N II}]$ is so strong. This work presents the results of a first analysis of the spectra of some of the galaxies above obtained with the 1-m telescope plus 2DFRUTTI detector of the Cerro Tololo Inter-American Observatory. The spectra are all very similar showing strong stellar continuum and absorption lines, and all the emission spectra show $[\text{O III}] > [\text{O II}]$, $[\text{N II}] > \text{H}\alpha$. None of the spectra show $\text{H}\beta$ in emission. Using the relative intensities of the H and K CaII lines (Talent 1982, *Pub. A.S.P.*, 94,36), the obtained integrated spectra for all the observed galaxies is later than G0, which means that the $\text{H}\beta$ absorption lines should not be strong. From the relative intensities of the emission lines, we conclude that these galaxies cannot be classified as Starburst or LINERS. They are similar to Seyfert 2 (Osterbrock 1986, *Active Galaxies and QSOs*, preprint), but the FWHM of the lines is less than 300 km s^{-1} . Also OI $\lambda 6300$ is not clearly seen, and the absorption spectrum is strong relative to the emission spectrum. The preliminary conclusion is an activity similar but milder than that present in Seyfert 2 galaxies, as suggested by Rose and Searle (1982, *Ap. J.*, 253, 556) and Rose and Cecil (1983, *Ap. J.*, 266, 531) for the nucleus of M51, maybe affected by an anomalous nitrogen abundance.

Key words: GALAXIES-ACTIVE — SPECTROSCOPY

DISCUSSION

CRUZ-GONZALEZ: Sería interesante ver si estas galaxias tienen excesos en infrarrojo lejano buscándolas en los catálogos del IRAS, ya que esto es una característica importante de las Seyfert 2.

BERGMANN: Voy a hacerlo. Gracias.

ALDROVANDI: Em modelos recém calculados a iaia do $[\text{N II}]$ é bastante sensível a profundidade óptica da região emissiva e a presença de campos magnéticos. Falar de sub-abundância ou super-abundância baseando-se somente em modelos "radiation bounded" pode levar a um resultado falso.

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