

A SURVEY OF PLANETARY NEBULAE IN THE SMC AND M31

N. Meyssonnier, M. Azzopardi and J. Lequeux
Observatoire de Marseille, France
R. Gathier
European Southern Observatory, F.R.G.

ABSTRACT. Our general method for finding planetary nebulae (PN) is to make wide field objective-prism or objective-grating low-dispersion spectra on photographic plates, PN stand up amongst other emission-line objects either as H α + [N II] 6548-6583 A emitters or as [O III] 50007 A emitters with faint or no continuum, higher-resolution spectroscopy is used for confirming a selection of candidates.

For the SMC we used the Curtis Schmidt Telescope at Cerro Tololo equipped with the 10° prism (420 A mm⁻¹ at H α) and a 110 A band width interference filter transmitting H α + N II; the field is 3°4 × 3°4 (Azzopardi and Meyssonnier 1986, *IAU Symposium No. 116*, p. 225), spectroscopy of about 20 new PN candidates has been partly secured at ESO using the 3.60-m telescope and both slit (Boller and Chivens) and multi-aperture spectroscopy (Optopus). See below the spectrogrammes of two new discovered planetary nebulae.

For M31 we used the CFH telescope with the prime-focus green greys (dispersion 2000 A mm⁻¹), a schott GG 435 filter and hypersensitized IIIa-J plates; the field is 1° × 1° (Lequeux, Meyssonnier and Azzopardi 1987, *Astron. Astrophys. Suppl.*, 67, 169). We very recently completed the coverage of the galaxy (10 fields partially overlapping). The present inventory covering 2/3 of the galaxy contains about 1200 objects showing emission lines between 4350 and 5300 A, most of which have no continuum and are believed to be PN's; there is a good agreement with the surveys by Ford and collaborators in the areas in common.