NEW OBSERVATIONS OF PLANETARY NEBULAE S22 AND YM29

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ABSTRACT. Spectral and monochromatic observations of two thin-filamentary nebulae S22 and YM29 have been carried out in the lines [O III] 5007A, [N II] 6584A and [S II] 6717+6732A. Radial stratification of the emission typical for photoionization excitation has been found: displacement between [O III] - bright regions and [S II] - and [N II] - bright regions is equal $\Delta R \sim 0.1R$ (about 0.01 to 0.2 pc), the first ones being closer to the nuclei. Both nebulae are characterized by more diffuse morphology in the [O III] line and by thin-filamentary one in the [N II] and [S II] lines.

Both objects seem to be old planetary nebulae of PNI type probably having stellar wind from their nuclei.

Optical 4000-7000A and UV 1150-3150A spectra of YM29 nucleus have been analyzed in looking for stellar wind indicators. The spectra seem to be similar to sdO spectra with black-body temperature of 58000 ± 6000 K. Overall spectral structure may probably show some hints of PCyg-type lines, but one needs to obtain spectra with better resolution and statistics. The nebula YM29 and its nucleus have been also observed in X-ray range 0.2 - 3.5 KeV, but clear indications on strong wind have not been found. There are neither compact nor diffuse sources with the 3σ upper limit for 0.2 - 3.5 KeV flux: $F_{nucl} \leq 1.4\ 10^{-13}$ ergs/cm^{2}s and $F_{YM29} \leq 8\ 10^{-14}$ ergs/cm^{2}s under "standard" spectrum $J(E) \sim E^{-1.5}$ photons/cm^{2}s and $N_H = 6\ 10^{19}$ cm^{-2}.

The detailed results are given in Arkhipova, V.P., Lozinskaya, T.A., Moskalenko, E.I., 1986, Pisma Astron. Zh. (Sov. Astron. J. Lett.), v. 12, p. 890; Lozinskaya, T.A., Sitnik, T.G., Toropova, M.S., 1984, Pisma Astron. Zh. (Sov. Astron. J. Lett.,), v. 10, p. 122; Lozinskaya, T.A., Sitnik, T.G., Toropova, M.S., 1986, Astron. Zh. (Sov. Astron. J.), v. 63, p. 255.

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