

IS NGC 2242 A NEW PLANETARY NEBULA?

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ABSTRACT. An interesting object was found on the IIIaJ objective prism plate SP1270, taken on Jan. 12.6 UT, 1983 with the Beijing Observatory 60/90-cm Schmidt telescope plus 5.3 objective prism with a dispersion of 580 A/mm at H γ . The emission lines [O III] $\lambda\lambda$ 4959+5007 and H β were extremely strong. The lines H γ ---H δ and [O II] λ 3727, all in emission, were broad and conspicuous. Two prominent emissions were tentatively identified as He II λ 4686 and He II λ 4542. Of all these lines none showed any noticeable redshift. It belongs to the Galaxy. The overall spectrum looked like that of a planetary nebula. But on the POSS overlay this object was designated as RNGC 2242 and ZWG 204.005. It was listed as a galaxy either in ZWG, or in A Master List of Nonstellar Optical Astronomical Objects, but it was absent from any previous catalogues of the planetary nebula.

The precise position of the central image is:

$$\alpha = 6^{\text{h}}30^{\text{m}}28^{\text{s}}.06 \quad (1950)$$

$$\delta = 44^{\circ}48'58".2 \quad (1950)$$

The integrated photographic magnitude was 14.^m5 given in the RNGC.

According to the above informations, we suppose that NGC 2242 may be a planetary nebula. Then we informed about it to Prof. He Xiang-Tao, Prof. He and H. Maehara *et al.* have made follow-up observations of this object with the Kiso 105-cm Schmidt telescope and the Okayama 188-cm and 91-cm telescope. Luminosity and color distributions and a small heliocentric velocity (-30 km/s) are all inconsistent with previous classification as a galaxy. NGC 2242 is probably a planetary nebula located at ~ 2 kpc from the sun and at ~ 500 pc above the galactic plane.