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## PN G291.4–00.3: A NEW TYPE I PLANETARY NEBULA<sup>1</sup>

S. Durand,<sup>2</sup> D. Nürnberger,<sup>3</sup> and J. Köppen<sup>4</sup>

In the vicinity of the southern hemisphere giant H II region NGC 3603 we discovered a new planetary nebula: PN G291.4–00.3 located at  $RA_{J2000.0} = 11^h14^m32^s1 \pm 0^s3$  and  $DEC_{J2000.0} = -61^\circ00'02'' \pm 1''$ . Monochromatic images reveal a central ring-like structure with onsets of arc-like filaments which might outline a bipolar outflow. Optical imaging and spectroscopy confirm that the emission line object found on WFI images is a genuine planetary nebula, and that it is a high-excitation bipolar Type I object.

PN G291.4–00.3 (Fig. 1) was discovered serendipitously on wide field CCD exposures centered on the giant H II region NGC 3603. These images were obtained with the Wide Field Imager mounted at the ESO/MPG 2.2-m telescope on La Silla under moderate seeing conditions.

Its appearance consists of a roughly north-south elongated ring-like structure with short onsets of spiral-like arms at the northern and southern tips. The central ring appears to be tilted by  $50^\circ$  to  $55^\circ$  against the plane of sky. Its diameter is about  $5''.4$  along the major axis. The arc- or spiral-like shaped filaments might be indicative for a wide-angle hourglass-shaped bipolar outflow (P.A.  $\sim 80^\circ$ ).

Spectroscopic observations were performed using EFOSC 2 at the ESO 3.6-m telescope. The spectrum

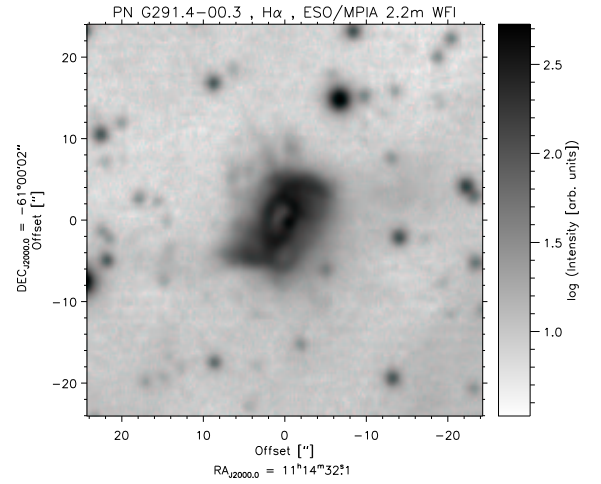


Fig. 1.  $H\alpha$  narrow band image obtained with the WFI mounted at the ESO/MPG 2.2-m telescope.

exhibits a very strong He II  $\lambda 4686$  line, but also [S II] lines. Plasma diagnostics shows helium and nitrogen are enriched, while oxygen is depleted. Thus PN G291.4–00.3 is a high-excitation bipolar planetary nebula of Type I. The measured extinction and the radial velocity obtained from the  $H\alpha$  and [N II] lines of  $+5 \pm 1.5 \text{ km s}^{-1}$  indicate a distance of about 5.5 kpc.

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## REFERENCES

- Nürnberger, D., Durand, S., Köppen, J., Stanke Th., Sterzik, M. & Els, S., 2001, A&A, 377, 241

<sup>1</sup>Based on observations obtained at the European Southern Observatory, La Silla, Chile.

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