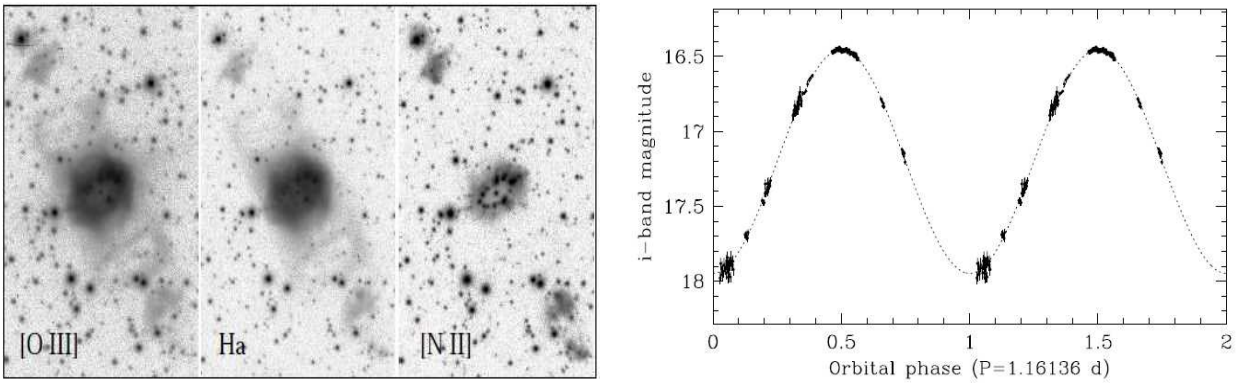

Fig. 1. Left: Narrow band [OIII], Hα and [NII] images of IPHASX J194359.5+170901 taken with the NOT Telescope (ORM, La Palma) with a field of view of 70×110 arcsec^2. North is up and East is left. Right: Light curve of the central star indicating a binary system with a period of $\sim$1.16 days (Corradi et al. 2011).

($r' - \mathrm{H}\alpha$) vs.($r' - i'$) colour-colour diagram (Viironen et al. 2009). Extended sources are detected in H$\alpha - r'$ mosaic images binned at 1.6×1.6 and 5×5 arcsec^2 which are visually inspected: all remarkable nebulae/morphologies are selected (Sabin et al. 2010). The subsequent follow-up spectroscopy was done using a number of telescopes such as the WHT and INT telescopes at ORM, the 2.1 m SPM-OAN (Mexico), the 1.9 m at Siding Spring (Australia) and the 2.1 m at Kitt Peak (US). In terms of extended sources, 161 PN candidates have been spectroscopically observed and around 30 new PNe have been unveiled so far out of the first 50 analysed. Another 10 new PNe are also in the list of new PNe from MASH by Parker et al. (2005) in the overlapping region of the two surveys. As an illustration of the results obtained so far, and of the potential of IPHAS, the so-called Necklace nebula is presented in Figure 1. In addition to its remarkable morphology (with a spectacular knotty ring and polar collimated, high velocity outflows), the nebula is of very high excitation and possesses a post-common envelope binary central star (Corradi et al. 2011).

3. CONCLUSION

The IPHAS survey can potentially discover hundreds of new PNe in the Galactic Plane. So far, we have identified and spectroscopically confirmed several tens of new PNe, as well as a number of sources of different classes, such as symbiotic stars and young and/or massive emission-line stars. Many of the new PNe are either point sources (compact) or extended (up to several arcmin in size) and generally faint. It is too early to draw any full picture, but clearly the undergoing search and analysis will greatly improve the census of PNe in the Milky Way. This will help to understand not only the PNe Galactic population size and distribution, but also many details of their physical characteristics and evolution properties.

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