

# An Innovative and Efficient Technique to Search for Symbiotic Stars

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## Abstract

Symbiotic systems are among the contenders for Type Ia SN progenitors. Confirming this requires a census of symbiotics to unveil the relation between the SN rate in a given galaxy and the number of symbiotics at present-time. However, SySt share similar characteristics with planetary nebulae (PNe), T-Tauri stars, compact HII regions, B[e] stars, among others. The usual method to search for SySt -based on combinations of colour-colour diagrams-, is able to find SySt candidates, but a robust classification can only be achieved by costly spectroscopic follow-up. The spectroscopic analysis of recent  $H\alpha$  surveys in nearby galaxies found several SySt, a great number of them containing the optical emission lines, which primarily appear in symbiotic spectra: the O VI scattered Raman lines located at 682.5nm and 708.2nm. In this talk I will briefly review the extragalactic SySt and the number of the systems that show these Raman lines. My aim is to introduce the systematic survey of SySt we recently started in the Small Magellanic Cloud (SMC) based on the detection of the O VI 682.5nm line. The first results of this survey will be discussed. Noting that the presence of this Raman scattering line is an almost clear-cut proof of the presence of a symbiotic star, as it was detected in only a handful of non-symbiotic objects, such as young PNe and one B[e] star. This technique turned out to be very efficient.