

# The SExOSS Project with S-PLUS: Search of Extended Objects in the Southern Sky

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## Abstract /

S-PLUS (The Southern Photometric Local Universe Survey) will collect an unprecedented amount of good quality photometric data in the Southern Hemisphere, thanks to its deepness in 12 (narrow and broad) photometric bands and its sky coverage (it is expected to cover  $\sim 8000 \text{ deg}^2$ ). Both in coverage and number of observed objects, S-PLUS is only comparable to the Sloan Digital Sky Survey (SDSS) of the Northern Hemisphere.

The first release of S-PLUS includes more than  $3 \times 10^6$  sources located in the region of the sky known as Stripe-82. This release only covers  $300 \text{ deg}^2$  of the total planned area, and overlaps with the SDSS footprint. Since the Southern Hemisphere is quite less explored than the Northern Hemisphere, we propose to analyze the distribution of the different types of extended sources observed with S-PLUS in order to characterize their nature and its completeness.

In this contribution we show preliminary results of the SExOSS (Search of Extended Objects in the Southern Sky) Project, obtained from a sub-sample of 500 extended sources located in the Stripe-82 region and observed with both S-PLUS and SDSS. As a first step, using the SDSS optical spectra available for this sample, we spectroscopically classified the objects according to its inner activity (into quiescent galaxies, emission-line galaxies, AGNs, etc.). As a second step, with the 12 bands of S-PLUS, we performed a photometric analysis, and obtained distance and luminosity distributions for our sample.

This work represents the first step of the SExOSS Project, which we plan to extend to a larger sample of objects in the near future. The aim of the project is to test photometric relations already known from broad-band filters for samples of the northern sky with large samples of the southern sky, and to use narrow-band filters to deepen on the characterization of those objects.

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