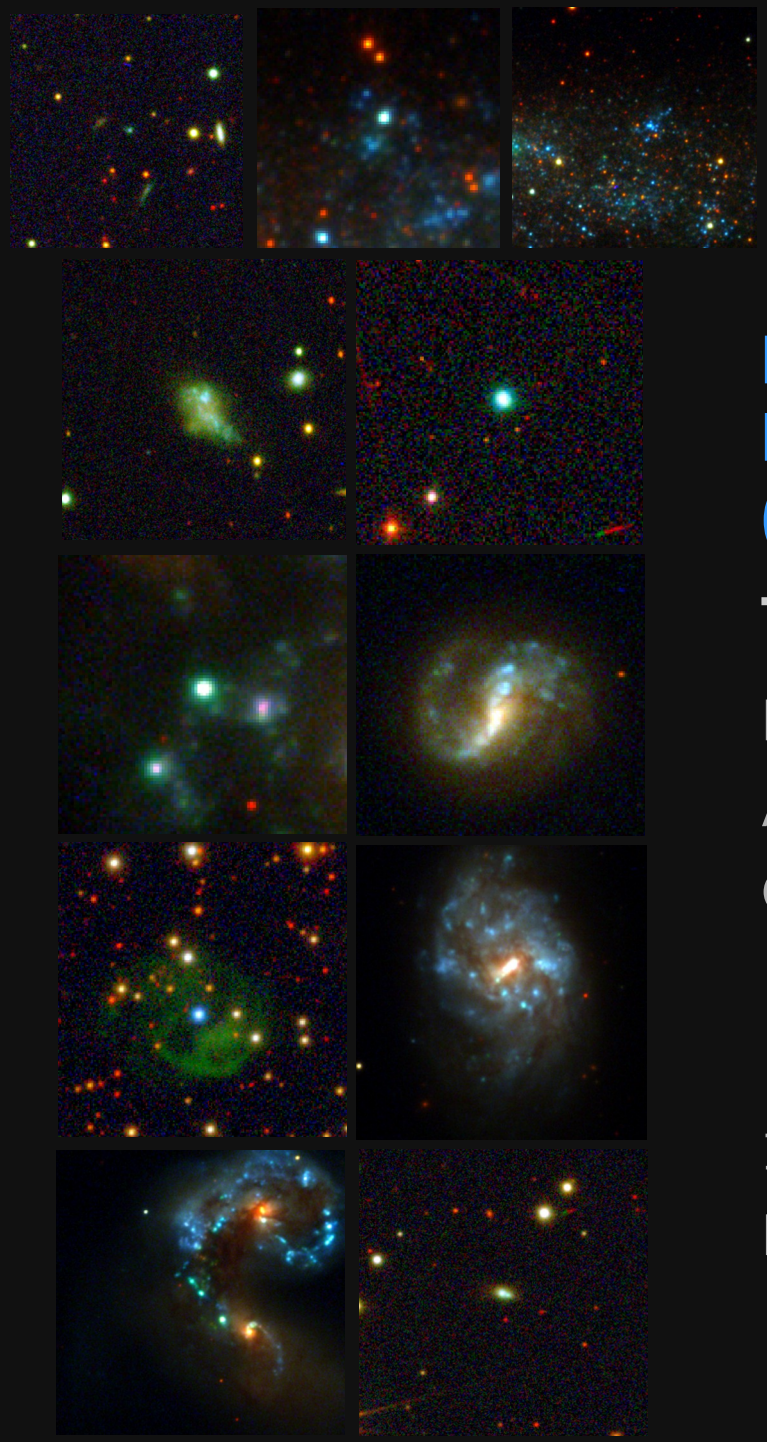

Hα emitters from the Southern Photometric Local Universe Survey (S-PLUS)

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16th S-PLUS Meeting
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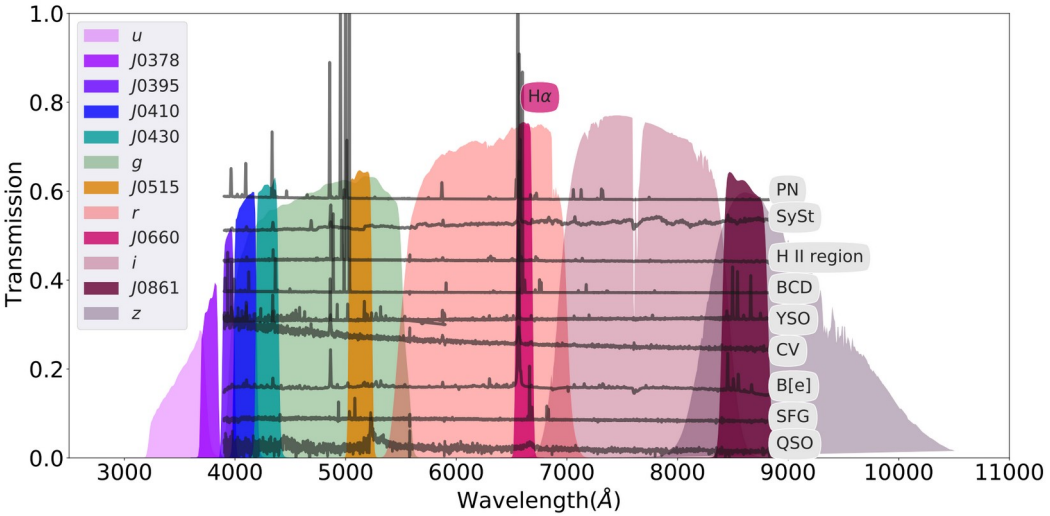
Context

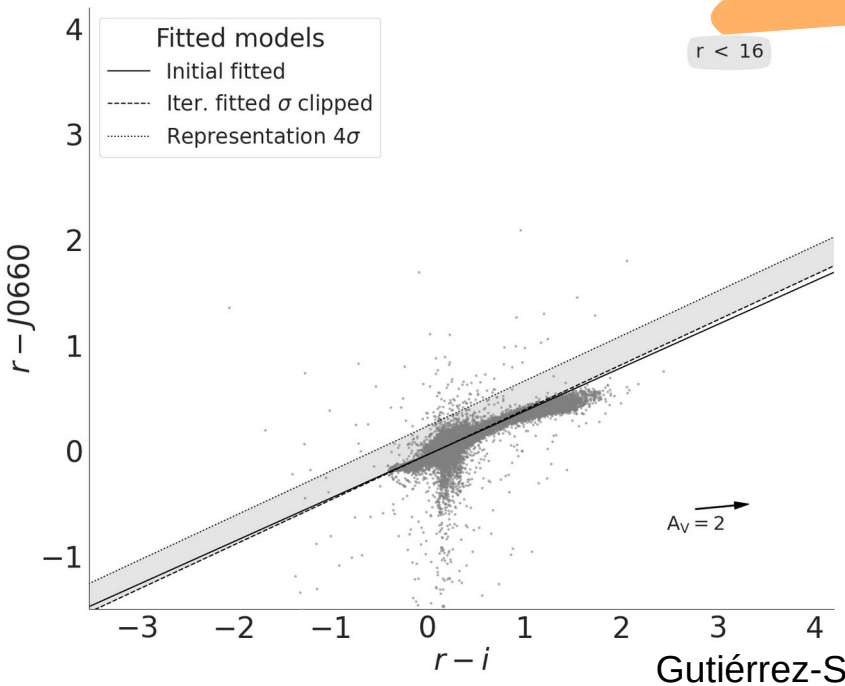
In the way of mapping 9000 deg² of the Southern hemisphere, the S-PLUS project is also surveying the sky in a proxy of a myriad of astrophysical processes: the Hα transition. Here we explore such a capability from its DR3 to make Hα emitters in evidence from ***(r - J0660) versus (r - i)*** *color-color diagram*

Selecting the Hα emitters

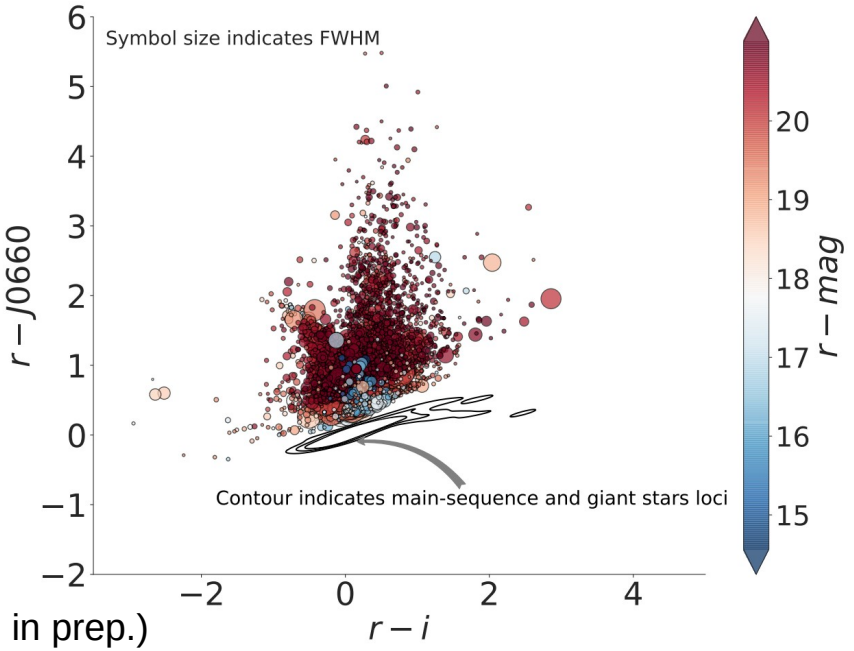
The identification of Hα emitters was based on the method applied by Witham et al. (2008)

Iteratively fit the main stellar locus and select all Hα-excess sources which lie more than 3σ away from the fitted locus

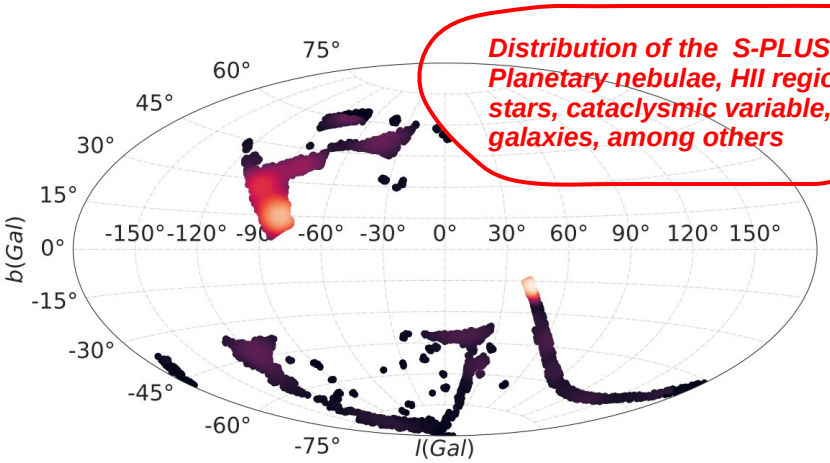




r < 16



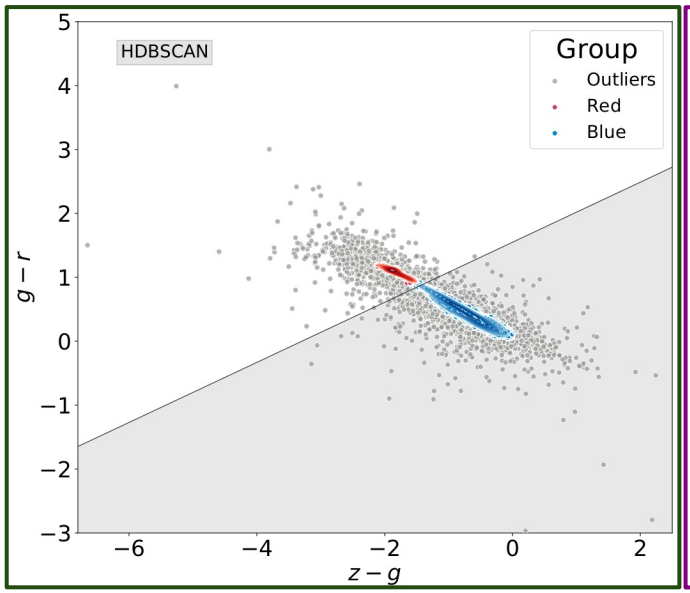
Gutiérrez-Soto et al. (2022, in prep.)

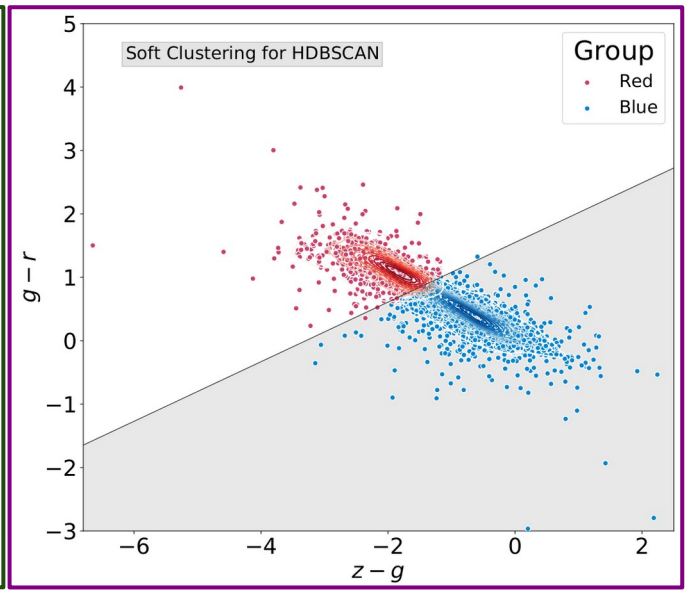


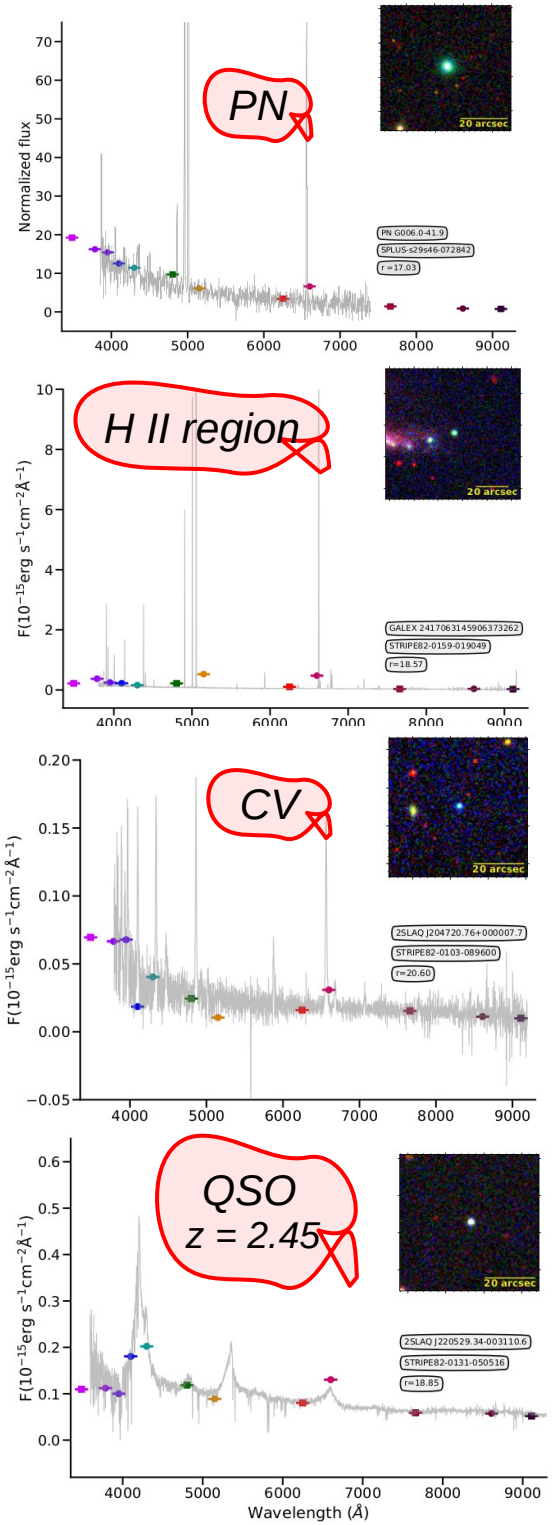
Distribution of the S-PLUS Hα emitters: Planetary nebulae, HII regions, symbiotic stars, cataclysmic variable, supernovas, galaxies, among others

Grouping the Hα emitters into blue and red colour-types

Objects of our sample were divided into two groups, distinguishing the bluer from the redder population: unsupervised machine learning like ***hierarchical density-based cluster selection (HDBSCAN)*** *and* ***soft clustering*** *technique were applied based on the (g − r) and (z − g) colors*







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Gutiérrez-Soto et al. (2022, in prep.)