

NITROGEN ABUNDANCE OF STAR-FORMING GALAXIES FROM THE CALIFA SURVEY

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We present the relation of the nitrogen abundance (N/O) and the fraction of young, intermediate and old stellar populations of 100 star-forming galaxies from the CALIFA survey.

We study the ionized gas nitrogen abundance (N/O) of a sample of 100 star-forming galaxies from the CALIFA survey (Sánchez et al. 2012, 2016), selected according to their loci in the BPT diagram, using emission-line ratios measured from their SDSS *integrated* spectra. We compare the local gas nitrogen abundance of different individual regions of these galaxies with their metallicity (O/H), the mean age and metallicity of their stellar populations, and their loci in the BPT diagram. We find that N/O decreases with the fraction of young stellar populations in each individual region of these galaxies and increases with the fraction of intermediate stellar populations (fig. 1), but we find no relation between N/O and the fraction of old stellar populations. We suggest a scenario where stars enrich the ISM of these galaxies as they evolve, but after considerable time interval processes such as mixing dilute the enriched material, erasing the link between the older stellar populations and the previously enriched gas.

REFERENCES

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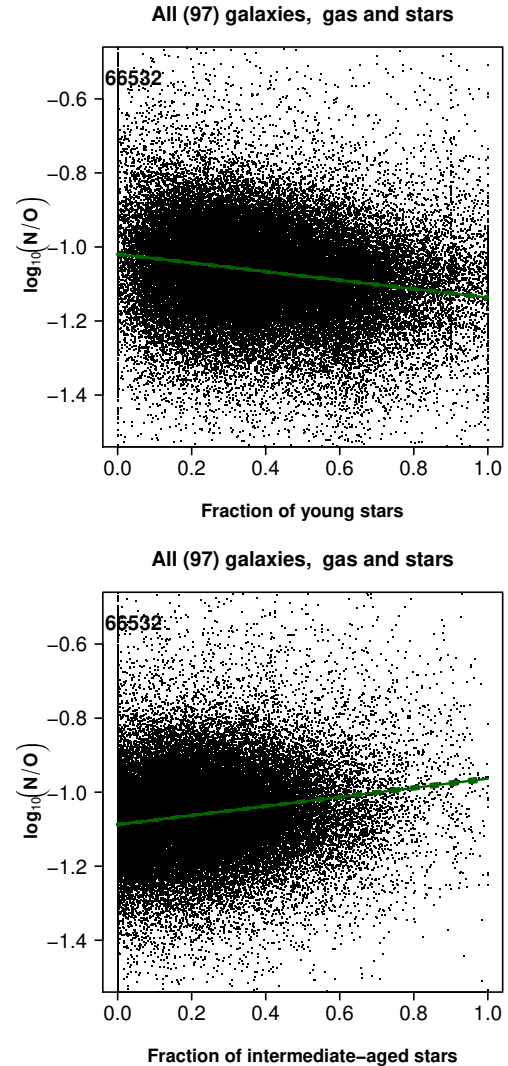


Fig. 1. Spaxel-by-spaxel nitrogen abundance of 97 galaxies from our sample as a function of the fraction of young and intermediate stellar populations (*top and bottom panels, respectively*). The green lines represent linear fits to the data. The total number of spaxels in each panel is in the upper-left corner.