

An up-scaled endeavor for exploring OB stars in the Milky Way within the WEAVE-SCIP survey

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Abstract

The study of massive OB stars plays a very important role in our understanding of galaxies. Despite their short lives, they produce strong feedback into their environment from birth to death, becoming the main source of their chemo-dynamical evolution. However, OB stars gather many open questions concerning their evolution and physical properties that remain unanswered. In this context, the Milky Way as a whole provides a perfectly suited laboratory to study them.

From an empirical point of view, answering some of these questions requires spectroscopic observations with sufficient resolution of statistically significant samples of these stars. To date, most of the studies have used samples with a reduced number of stars, they were observed at low resolution, or they were focused on specific regions within our galaxy.

To overcome this situation, the WEAVE-SCIP low-resolution (LR, R=5000) spectroscopic survey will target nearly 20.000 OB star candidates covering a large portion of the Northern Galactic disk, identifying and building the largest and most homogeneous spectroscopic sample of them up to date. This, complemented with the kinematic information from Gaia, will allow us to address many of the open questions yet unanswered, bringing our knowledge of massive stars to the next level.

In this poster introduces the OB star component of the WEAVE-SCIP LR survey, covering different aspects of this sub-survey, including (1) the target selection, which is mainly based on data provided by the IGAPS, 2MASS and Gaia-DR3 catalogs, (2) the expected coverage in terms of galactic coordinates and distance, (3) the main plans for the scientific exploitation of the data, and (4) the various synergies which will be established with other ongoing observational projects aimed at the study of Galactic OB stars, such as ALSIII, IACOB, Galante, MudeHar, MOBSTER or TESS-OB.

My poster in zenodo.org can be found here