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VLT SPECTROSCOPY OF MASSIVE STARS IN NGC55

N. Castro,[1,2] M. García,[1] C. Trundle,[3] A. Herrero,[1,2] and F. Bresolin[4]

We present the first spectroscopy study of massive stars in NGC55. The data, taken with VLT-FORS2 allow us to provide spectral classification for 200 objects located throughout the galaxy. From this sample, suitable B-type supergiants are chosen for subsequent higher resolution spectroscopic observations that will enable a quantitative study. The stellar abundances will be a key point in the study of galaxy chemical evolution. We also discuss how GTC-OSIRIS can be a valuable tool for similar studies.

1. INTRODUCTION

Massive stars are the main source of ionization and enrichment of Galaxies. Our group has performed quantitative spectroscopic analyses of these objects using FASTWIND (Puls et al. 2005), to derive their physical properties and abundances. When obtained for targets in a variety of metallicity environments, the results allow us to evaluate the impact of the metal content on evolution of massive stars.

The advent of 8-10m class telescopes has made possible to study quantitatively blue massive stars in galaxies outside the Local Group (Urbaneja et al. 2005). We present the first results in NGC55.

2. RESULTS SO FAR

The bluest brightest objects in NGC55 were selected from a photometric catalog (Bresolin et al. 2006). We classified their low resolution spectra following the criteria of Walborn & Fitzpatrick (1990) and Evans & Howard (2003); finding 18 O-stars, 76 B-stars, 43 A-stars and 13 WRs and LBVs (see Figure 1). We plan to obtain intermediate resolution spectra of the earliest stars for a subsequent quantitative analysis.

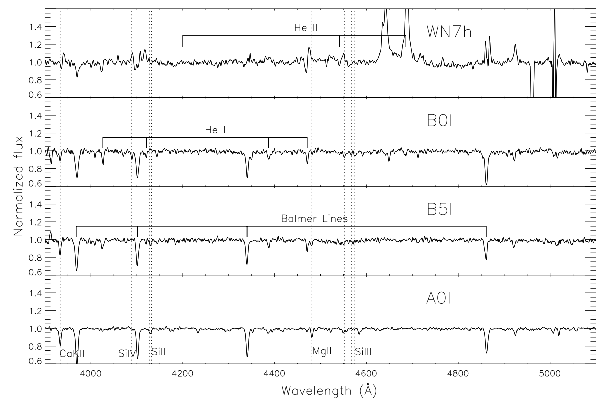

Fig. 1. VLT-FORS2 spectra in NGC55. The spectral resolution and S/N suffice to get spectra classification (see the lines of He, Si, Mg and Ca).

3. THE FUTURE WITH OSIRIS

The improved spectroscopic capabilities of OSIRIS will play a crucial role in our study of massive stars out of the Local Group. Its enhanced sensitivity (V_{limit} OSIRIS=27.2) will enable us to study the faintest candidates and to achieve a better S/N. This, together with the use of a higher resolution mode ($\lambda/\Delta\lambda_{max} = 2500$) will make our analysis more accurate.

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[1]Instituto de Astrofísica de Canarias, Vía Láctea, E-38200 La Laguna, Tenerife, Spain (norberto@iac.es).
[2]Depto. de Astrofísica, Universidad de La Laguna, Avda. Astrofísico Francisco Sánchez, E-38071 La Laguna, Spain.
[3]The Department of Pure and Applied Physics, The Queen's University of Belfast, Belfast BT7 1NN, UK.
[4]Institute for Astronomy, 2680 Woodlawn Drive, Honolulu, HI 96822, USA.