

Talk at Splinter Meeting

Splinter I

MUSE DISCOVERY OF WOLF-RAYET STARS IN IC 4870

B. Kleemann¹, D. J. Bomans^{1,2}, U. Schilling¹, A. Becker¹, K. Weis¹, R.-J. Dettmar^{1,2}, A. Pasquali³

¹*Astronomical Institute, Ruhr-University Bochum*

²*RUB Research Department Plasmas with Complex Interactions*

³*Astronomisches Rechen-Institut, Zentrum für Astronomie der Universität Heidelberg*

We present observations of the dwarf galaxy IC 4870 taken during the second commissioning run of the MUSE integral-field spectrograph at the VLT between July 7th and August 4th 2014. The data has a spectral range of 4600 Å to 9350 Å, a spectral resolution of $R \approx 3000$, a field of view of 1×1 arcminute, and a spatial sampling of 0.20×0.20 arcseconds per pixel.

In a first analysis of the spectral data acquired from the central region of the galaxy we found typical Wolf-Rayet (WR) features, namely the broad blue and red bumps at approximately 4680 Å and 5808 Å. With the high spatial resolution we were also able to look at reconstructed images from individual slices. Emission appears in the continuum subtracted imaging data in both the blue and red WR bumps. This emission is however not only directly associated with the central cluster, but also seen in several individual locations in the immediate vicinity. These can be associated with single WR stars or small stellar groups. In addition, extended emission was found in He II $\lambda 4686$ as well as [Ar IV] lines, pointing to highly ionized nebulae in the central part of this galaxy and tracing the Lyman continuum flux from the WR stars. A preliminary analysis of the content of WR stars in these areas, following López-Sánchez & Esteban (2010), yields a few hundred WR stars of types WNL and WCE in the center. The smaller individual locations contained less than ten or even only a single WR star of type WNL. A more detailed analysis of the data is currently underway.