



# Dissecting high-mass star-forming regions; tracing back their complex formation history

Arjan Bik (1), Thomas Henning (1), Andrea Stolte (2), Wolfgang Brandner (1), Dimitrios Gouliermis (1), Mario Gennaro (1), Anna Pasquali (3), Boyke Rochau (1), Henrik Beuther (1), Yuan Wang (4) ((1) MPIA, Heidelberg, Germany (2), Argelante Institut fuer Astronomy, Bonn, Germany (3) Astronomisches Rechen Institut, Heidelberg, Germany, (4) Purple Mountain Observatory, Nanjing, China)

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We present near-infrared JHKs imaging as well as K-band multi-object spectroscopy of the massive stellar content of W3 Main using LUCI at the LBT. We confirm 13 OB stars by their absorption line spectra in W3 Main and spectral types between O5V and B4V have been found. Three massive Young Stellar Objects are identified by their emission line spectra and near-infrared excess. From our spectrophotometric analysis of the massive stars and the nature of their surrounding HII regions we derive the evolutionary sequence of W3 Main and we find evidence of an age spread of at least 2-3 Myr. While the most massive star (IRS2) is already evolved, indications for high-mass pre-main-sequence evolution is found for another star (IRS N1), deeply embedded in an ultra compact HII region, in line with the different evolutionary phases observed in the corresponding HII regions. We have detected the photospheres of OB stars from the more evolved diffuse HII region to the much younger UCHII regions, suggesting that the OB stars have finished their formation and cleared away their possible circumstellar disks very fast. Only in the hyper-compact HII region (IRS5), the early type stars are still surrounded by circumstellar material.

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