

Breaking news from high-mass star formation: recent VLBI contributions

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Content

The formation process of high-mass stars ($M > 8 M_{\text{sun}}$) is still unclear; this is mainly due to their fast evolution and large distances that make it very difficult to observe them in detail. However, many observational and theoretical efforts have been made in the last decades that have shed light on some aspects of the formation process. For instance, it has been shown that molecular outflows are essential during the formation process as much as the accretion disks, similarly to what happens during the formation of low-mass stars. Furthermore the magnetic field is considered playing an important role in the formation of massive young stellar objects (YSOs), for instance in launching and shaping molecular outflows. I will briefly highlight some of the most recent results in the field, focusing mainly on those obtained through the VLBI. In particular, I will spend some time showing the results obtained with the EVN toward the high-mass star-forming region W75N(B). Several radio sources have been detected in this region, among them the massive YSOs VLA 1 and VLA 2 are thought to be in different evolutionary stages. In particular, VLA 1 is at the early stage of the photoionization and it is driving a thermal radio jet, while VLA 2 is a thermal, collimated ionized wind surrounded by a dusty disk or envelope. The 22 GHz water masers around both VLA 1 and VLA 2 have been monitored, in polarimetric mode, over a period of six years with the EVN. A complete picture of the region will be presented, including the most recent ALMA results.

Primary author(s) : Dr. SURCIS, Gabriele (INAF - Osservatorio Astronomico di Cagliari)

Presenter(s) : Dr. SURCIS, Gabriele (INAF - Osservatorio Astronomico di Cagliari)

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