

A SYNOPTIC VIEW OF THE MAGELLANIC CLOUDS:
VMC, GAIA AND BEYOND

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Evolved Massive Stars in the Magellanic Clouds

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We present an investigation of evolved massive stars in the MCs, in particular of the red supergiant stars (RSGs). For the LMC, 744 RSGs are identified and analysed by using IR CMDs, SEDs and MIR variabilities. The results show that both the variability and luminosity may be important for the mass-loss rate (MLR), and the discrepancy between observation and evolutionary models can be mitigated by considering both variability and extinction. For the SMC, we present a clean, magnitude-limited, astrometry-constrained, multiwavelength source catalog (50 bands ranging from UV to far-IR) with 45,466 targets in total, intending to build an anchor for the studies of massive stars at low-metallicity. By using the evolutionary tracks from MIST and the theoretical J-Ks color cuts, we identify 1,405 RSG, 217 YSG and 1,369 BSG candidates in the SMC. A comparison between the models and observational data indicates the uniqueness of RSGs population connecting the evolved massive and intermediate stars, since the lower limit of initial mass of the RSGs may reach to 7 or even $6M_{\odot}$. The study of RSGs in both the LMC and SMC will help to understand the effect of different factors on the MLR.