

Pre-supernova outbursts in Red Supergiants: data challenges of an optical/NIR observational campaign

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The studies of pre-supernova outbursts have received lot of attention because of their high diagnostic power for the nature of the supernova progenitor and the implications on the structure of the circum-stellar medium (CSM) in the immediate surrounding of the exploding SNe. To study the low-luminosity bursts of RSGs, we assembled a literature-based catalog of a coeval and co-distant sample of galactic RSGs in the Scutum-Crux region, which gives us the possibility to change the observational paradigm of pre-SN outburst studies. We launched a short-cadence long-term monitoring campaign aimed to characterize the multi-color light curves of this large sample of RSGs, to detect late-stage outbursts and to compare them with very recent models of the final phases of low-mass RSGs before SN explosion, thus possibly predicting core collapse of specific objects before it occurs. We present this on-going project and some preliminary results.

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