Special Issue on "Evolved Massive Stars in Transition Phases"

We would like to draw the attention of the massive star community to the call for papers for a Special Issue on "Evolved Massive Stars in Transition Phases". This issue is aimed at providing a platform for recent results and new ideas in the field.

The post-main sequence evolution of massive stars is one of the big open issues in modern astronomy. On their evolutionary paths, crossing the region of the classical blue supergiants, all the way up to the final supernova explosion, massive stars pass through several transition phases (B[e] supergiants, red supergiants, yellow hypergiants, luminous blue variables, and Wolf-Rayet stars), in which they often undergo strong mass loss. The physical mechanisms behind it and the amount of material ejected, both in form of asymmetric, steady winds or violent episodic eruptions, are currently unknown but crucial to understand stellar evolution. Recent advances in both numerical modeling techniques and high-quality observations will provide the key physical ingredients for the next generation of evolutionary and wind models. We invite investigators to contribute to original research articles as well as review articles that will stimulate the continuing effort to understand both the classical blue supergiants and massive stars in transition phases. We are interested in articles that explore aspects of evolutionary connections, the mass-loss behavior, the triggering mechanisms for variability and mass eruptions, the interaction of the ejected material with the environment, and dust production from both observational and modeling perspectives. Potential topics include, but are not limited to:

1. Origin of the variability seen in classical blue supergiants and evolved massive stars in transition phases, focusing in particular on the role of the high luminosity and proximity to the Eddington limit, pulsations, rotation, and magnetic fields

2. Insights from high-quality spectroscopic, photometric, polarimetric, and interferometric data into reliable timescales of the variabilities and their influence throughout the evolution of massive stars

3. The shape of the circumstellar environment and the feedback of the interstellar medium to the variable mass loss and eruptions, and how studies on the stellar environments improve our knowledge about the history of the gas and the evolution of these stars

4. Evidences of evolutionary connections (progenitors, fates) between different transition phases

5. Role of binarity in the evolution of massive stars, and the consequences of binary interactions for the surroundings

All submissions will be refereed. More details on the schedule, and information on the submission process can be found at the web-address below.

On behalf of the editors
Michaela Kraus, Lydia Cidale and Jose Groh

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