

Workshop

Stellar End Products: The Low Mass - High Mass Connection

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Title:

Linking the evolution of AGB stars with the molecular chemistry in their circumstellar envelopes

Abstract:

I will present a new theoretical study on the molecular chemistry in the inner CSEs of AGB stars. A dynamic model for periodically shocked atmospheres, that includes an extended chemo-kinetic network, is for the first time coupled to detailed evolutionary tracks for the AGB phase computed with the COLIBRI code. The new models recover the measured HCN concentrations as a function of the mass-loss rate and reproduce the observed systematic increase of HCN along the M-S-C spectral sequence. I will discuss the physical implications for the pulsation-induced shocks that propagate through the CSEs.