

WOLF-RAYET AND LUMINOUS BLUE VARIABLE STARS: THE ISO IMPACT ON WIND STRUCTURE AND EVOLUTION

Pat Morris^{1,2,3}

¹*IPAC, California Institute of Technology, Pasadena, California*

²*University of Amsterdam, Amsterdam, the Netherlands*

³*SRON Laboratory for Space Research, Utrecht, the Netherlands*

Spectra of Wolf-Rayet (WR) and Luminous Blue Variable (LBV) stars obtained with SWS and LWS have proved to be crucial to the study of the winds and circumstellar environments of these most luminous, massive stars. The importance of wind clumping, for example, is to revise the mass-loss rates downwards by factors of more than two. This drastically affects estimates of mechanical momentum into the ISM in driving star formation, and leads to important differences how evolutionary models are tested using abundances of elements that are the byproducts of nucleosynthesis. Wind clumping in WR stars and the LBV eta Carinae has been probed with SWS spectroscopy. The circumstellar (CS) environment of eta Carinae has also been probed with ISO spectroscopy, leading to a new evolutionary interpretation of its past with respect to its outburst and the hour-glass geometry of the resulting dusty nebula, contrasting sharply with the most contemporary theories of formation.

Here we review the impact of bringing the ISO spectra of WR and LBV stars together with latest model wind codes that now incorporate clumping and line-blanketing into the description of the winds, and show how the study of dust in the CS environments is leading to new perspectives on the evolution of these objects.