

FIRST Workshop Presentation Abstract:

Circumstellar Matter Around Massive Stars: Prospects for FIRST

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Abstract:

In this presentation we discuss the possible impact of FIRST on our knowledge and understanding of circumstellar material around massive stars and the implications for massive star evolution. In recent years, the complex nature of the circumstellar regions of evolved massive stars has become apparent. The circumstellar matter around Wolf-Rayet (WR) stars appears to be derived from two major sources; interstellar medium materials originally surrounding the WR star in its precursor O star phase and ejecta materials from one or more heavy mass-loss phases of evolution (e.g. as a red supergiant or luminous blue variable). Minor components from O star and WR winds may also be mixed in. Materials within a few parsecs of WR stars are expected to be dominated by ejecta. Recent observations of these materials show the existence of significant amounts of cool gas and dust, including molecular gas. In this presentation we discuss what can be learned about massive star evolution from circumstellar matter and illustrate the likely contribution of both imaging and spectroscopy with FIRST to understanding conditions in the ejecta from evolved massive stars, such as WR and luminous blue variables.