

Proposal Abstract:

Studying how stellar feedbacks (young-star feedback and supernova remnants) impact on multi-phase (ionized, atomic and molecular) gas components is the key to understand massive star formation regions. The lambda Orionis complex is a nearby multi-phase system shaped by both the supernova remnant and the present-day OB associations, and thus an ideal laboratory of exploring this issue. Motivated by this, we are promoting a "multi-phase gas surveys of lambda Ori" in multiple wavelengths, including the on-going TRAO CO survey and the SDSS H α survey. With its superior sensitivity, the FAST provide us an opportunity of mapping the lambda Ori in RRLs, HI and continuum simultaneously. Thus, we propose a pilot FAST survey of lambda Ori, serving as an important part of the multi-phase gas surveys. Our goal is to decompose multi-phase gas components of the lambda Ori, and study the interactions between multiple kinds of stellar feedback and multi-phase gas components.