

Hunting for the Missing Massive Stars in our Galaxy

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Abstract: The MIPS GAL 24 microns Galactic Plane Survey has revealed more than 400 compact-extended objects. Less than 15% of these MIPS GAL bubbles (MBs) are known and identified as evolved stars. I will first present the catalog of these objects and their general properties, in terms of morphology, size, broadband fluxes, including results from the Herschel Galactic Plane Survey (HiGal). Then, I will detail some of the follow-up observations obtained to identify the origin of the mid-IR emission and the nature of the unknown objects. In particular, I will focus on: (1) Spitzer/IRS observations of 4 MBs that lead to the discovery of two planetary nebulae with very hot white dwarf, a Wolf-Rayet star and a Luminous Blue Variable candidate; (2) near-IR observations obtained with TripleSpec at Palomar of 13 MBs, that revealed at least 3 new massive stars; (3) recent Herschel/PACS-SED and SPIRE-FTS observations of a 35 additional MBs. I will summarize the results of these follow-up and others in terms of newly discovered massive stars thanks to IR surveys of our Galaxy.