

# Circumstellar Environments of Southern M Dwarfs in the Solar Neighborhood

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We present the first results from SIRENS, the Search for InfraRed Excesses around Nearby Stars. Our goal is to characterize the circumstellar environments of the most common and closest stars in the Universe, the ubiquitous red dwarfs. In this phase of the study, we search 1404 southern M dwarfs within 25 parsecs of the Sun, as reported in Winters et al. (2014), using (Johnson-Kron-Cousins) optical, (2MASS) near-infrared, and (WISE) mid-infrared photometry for circumstellar disks and low-mass companions. Several studies have recently used WISE photometry to detect circumstellar disks and companions — searches around members of the nearby young moving groups, objects with parallaxes from Hipparcos, and many northern M stars in the SDSS. However, no work has yet been done that focuses on the nearest red dwarfs, which account for at least 75% of all stars. This study, a volume-limited search around M dwarfs in the southern sky, includes statistical conclusions applicable to a majority of the stars in the Universe, and opens potential gateways to a better understanding of star and planet formation.

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