

## The Discovery of Y Dwarfs with WISE

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One of the primary science goals of the Wide-field Infrared Survey Explorer (WISE)—a NASA mission that surveyed the sky at four mid-infrared wavelengths—is to identify very cold ( $T_{\text{eff}} < 1000 \text{ K}$ ) brown dwarfs. With atmospheric conditions similar to that of giant planets, brown dwarfs are ideal exoplanet analogs that can be observed free from the contaminating light of host stars. The study of these cold brown dwarfs will also provide constraints on the low-mass stellar mass function and on the lower mass limit of star formation, two critical constraints on theories of star formation. To date, we have identified roughly 200 new brown dwarfs with WISE, 14 of which are so cold ( $T_{\text{eff}} < 500 \text{ K}$ ) that the creation of a new spectral class—dubbed ‘Y’—was required. I will discuss the discovery of the Y dwarfs as well as our initial constraints on the substellar mass function.